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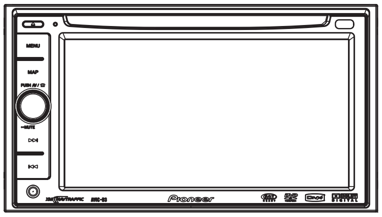
Service Manual


AVIC-D3/XU/UC

ORDER NO.
CRT3879

DVD MULTIMEDIA AV NAVIGATION SERVER

AVIC-D3/XU/UC

AVIC-D3/XU/EW5

This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech.Module	Remarks
CX-3212	CRT3896	MS5	DVD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly

For details, refer to "Important Check Points for Good Servicing".

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

K-ZZW. FEB. 2007 Printed in Japan

SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

This product contains mercury. Disposal of this material may be regulated due to environmental considerations.
For disposal or recycling information, please contact your local authorities or the Electronics Industries Alliance: www.eiae.org.

1. Safety Precautions for those who Service this Unit.

- **Follow the adjustment steps in the service manual when servicing this unit. When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.**

Caution:

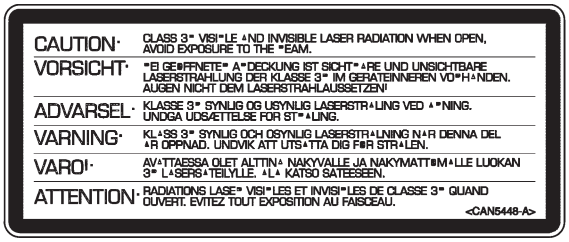
1. **During repair or tests, minimum distance of 13cm from the focus lens must be kept.**
2. **During repair or tests, do not view laser beam for 10 seconds or longer.**

2. The trianglar label is attached to the mechanism unit frame.

CAUTION
This product contains a laser diode of higher class than 1. To ensure continued safety, do not remove any covers or attempt to gain access to the inside of the product.
Refer all servicing to qualified personnel.

The following caution label appears on your unit.

On the top of the player.



CAUTION: CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO THE BEAM.
VORSICHT: BEI GEÖFFNETER ABDECKUNG IST SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG DER KLASSE 3B IM GERATEINNEREN VORHANDEN. AUGEN NICHT DEM LASERSTRAHLAUSSETZEN!
ADVARSEL: KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGA UDSÆTTELSE FOR STRÅLING.
VARNING: KLASS 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR OPPNAD. UNDVIK ATT UTSÄTTA DIG FÖR STRÅLEN.
VARO!: AVATTAESSA OLET ALTTINA NAKYVALLE JA NAKYMATTÖMÄLLE LUOKAN 3B LASERSÄTEILYLLE. ÄLÄ KATSO SATEESEEN.
ATTENTION: RADIATIONS LASER VISIBLES ET INVISIBLES DE CLASSE 3B QUAND OUVERT. EVITEZ TOUT EXPOSITION AU FAISCEAU.
<CAN5448-A>

WARNING!

The AEL (accessible emission level)of the laser power output is less than CLASS 1 but the laser component is capable of emitting radiation exceeding the limit for CLASS 1.
A specially instructed person should do servicing operation of the apparatus.

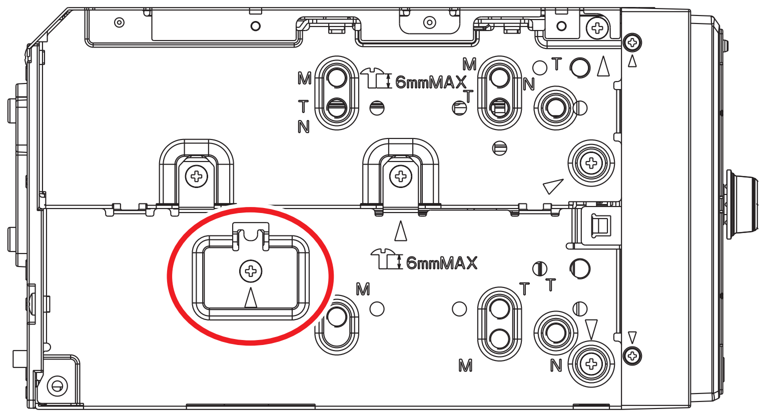
Laser diode characteristics
Wave length:
DVD:660 nm to 670 nm
CD:780 nm to 800 nm
Maximum output:
DVD : 1.27 mW(Emitting period :9 sec.)
CD : 6.26 mW(Emitting period : unlimited)

Additional Laser Caution

Transistors Q1103 and Q1104 in PCB drive the laser diodes for DVD and CD respectively. When Q1103 or Q1104 is shorted between their terminals, the laser diodes for DVD or CD will radiate beam. If the top cover is removed with no disc loaded while such short-circuit is continued, the naked eyes may be exposed to the laser beam.

● Service Precautions ❗

1. You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.
2. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.
3. Because a part to show in figure below becomes hot, take care upon its operation.



DVD MECHANISM MODULE section precaution

1. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
2. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY" .
3. After replacing the pickup unit, be sure to skew adjustment.
4. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.

COMPACT disc DIGITAL AUDIO

COMPACT disc DIGITAL AUDIO TEXT

DVD VIDEO

DVD VIDEO ™

DVD ROM ™

DVD ROM ™

Plays Windows Media™

DVD is a trademark of DVD Format/Logo Licensing Corporation.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

1. SPECIFICATIONS

● AVIC-D3/XU/UC

General

Rated power source	14.4 V DC (allowable voltage range: 12.0 V to 14.4 V DC)
Grounding system	Negative type
Max. current consumption	10.0 A
Backup current	6.5 mA or less
Display unit:	
Dimensions (W × H × D):	
D	
Chassis	178 × 100 × 165 mm (7 × 3-7/8 × 6-1/2 in.)
Nose	170 × 97 × 8 mm (6-3/4 × 3-7/8 × 3/8 in.)
Weight	2.2 kg(4.9 lbs)

Navigation

GPS Receiver:	
System	L1, C/Acode GPS SPS (Standard Positioning Service)
Reception system	8-channel multi-channel reception system
Reception frequency	1 575.42 MHz
Sensitivity	–130 dBm
Position update frequency	Approx. once per second
GPS antenna:	
Antenna	Micro strip flat antenna/ right-handed helical polarization
Antenna cable	5.0 m(16 ft. 5 in.)
Dimensions (W × H × D)	33 × 14 × 36 mm (1-1/4 × 1/2 × 1-3/8 in.)
Weight	105 g(0.23 lbs)

Display

Screen size/aspect ratio	6.1 inch wide/17:9 (effective display area: 136 × 72 mm)
Pixels	336 960 (480 × 234 × 3)
Type	TFT active matrix, transmissive type
Color system	NTSC
Operating temperature range	+22 °F to +185 °F
Storage temperature range	–40 °F to +185 °F

Audio

Continuous power output is 22 W per channel minimum into 4 ohms, both channels driven 50 to 15 000 Hz with no more than 5% THD.

Maximum power output	50 W × 4 50 W × 2 ch/4 Ω + 70 W × 1 ch/2 Ω (for subwoofer)
Load impedance	4 Ω (4 Ω to 8 Ω [2 Ω for 1 ch] allowable)
Preout max output level/output impedance	1.7 V/1 kohm
Equalizer (3-Band Parametric Equalizer):	
Low	
Frequency	40/80/100/160 Hz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	±12dB
Mid	
Frequency	200/500/1 k/2 kHz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	±12dB
High	
Frequency	3.15 k/8 k/10 k/12.5 kHz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	±12dB
Loudness contour:	
Low	+3.5 dB (100 Hz), +3 dB (10 kHz)
Mid	+10 dB (100 Hz), +6.5 dB (10 kHz)
High	+11 dB (100 Hz), +11 dB (10 kHz) (volume: –30 dB)
Tone controls:	
Bass	
Frequency	40/63/100/160 Hz
Gain	±12dB
Treble	
Frequency	2.5 k/4 k/6.3 k/10 kHz
Gain	±12dB
HPF:	
Frequency	50/80/125 Hz
Slope	–12 dB/oct
Subwoofer:	
Frequency	50/80/125 Hz
Slope	–18 dB/oct
Gain	±12dB
Phase	Normal/Reverse

DVD Drive

System	DVD-Video, Compact disc audio, MP3, WMA, AAC, DivX system
Usable discs	DVD-Video, Compact disc, MP3, WMA, AAC, DivX
Region number	1
Signal format:	
Sampling frequency	44.1/48/96 kHz
Number of quantization bits	16/20/24; linear
Frequency response	5 Hz to 44 000 Hz (with DVD, at sampling frequency 96 kHz)
Signal-to-noise ratio	97 dB (1 kHz) (IHF-A network) (CD: 96 dB (1 kHz) (IHF-A network))
Dynamic range	95 dB (1 kHz) (CD: 94 dB (1 kHz))

Distortion	0.008 % (1 kHz)
Output level:	
Video	1.0 Vp-p/75 Ω (±0.2 V)
Audio	1.4 V (1 kHz, 0 dB)
Number of channels	2 (stereo)
MP3 decoding format	MPEG-1 & 2 Audio Layer 3
WMA decoding format	Ver.9.0 L3
AAC decoding format	MPEG-4 AAC (only encoded by iTunes) : .m4a
DivX decoding format	Home Theater Ver.3, Ver.4, Ver.5.2 : .avi, .divx

FM tuner

Frequency range	87.9 MHz to 107.9 MHz
Usable sensitivity	8 dBf (0.7 µV/75 Ω, mono, S/N: 30 dB)
Signal-to-noise ratio	75 dB (IHF-A network)
Distortion	0.3 % (at 65 dBf, 1 kHz, stereo) 0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response	30 Hz to 15 000 Hz (±3 dB)
Stereo separation	45 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range	530 kHz to 1 710 kHz (10 kHz)
Usable sensitivity	18 µV (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IHF-A network)

Note:
- Specifications and the design are subject to possible modifications without notice due to improvements.

● AVIC-D3/XU/EW5

General

Rated power source .... 14.4 V DC (allowable voltage range: 12.0 V to 14.4 V DC)
Earthing system.................. Negative type
Maximum current consumption .... 10.0 A
Backup current................. 6.5 mA or less
Display unit:
Dimensions (W × H × D):
DIN
Chassis .... 178 × 100 × 160 mm
Nose..................... 188 × 118 × 13 mm
D
Chassis .... 178 × 100 × 165 mm
Nose..................... 170 × 97 × 8 mm
Weight .... 2.2 kg

Navigation

GPS Receiver:
System .... L1, C/Acode GPS SPS (Standard Positioning Service)
Reception system .... 8-channel multi-channel reception system
Reception frequency ... 1 575.42 MHz
Sensitivity .... –130 dBm
Position update frequency .... Approx. once per second
GPS aerial:
Aerial .... Micro strip flat aerial/right-handed helical polarisation
Aerial cable .... 5.0 m
Dimensions (W × H × D) .... 33 × 14 × 36 mm
Weight .... 105 g

Display

Screen size/aspect ratio...... 6.1 inch wide/17:9 (effective display area: 136 × 72 mm)
Pixels .... 336 960 (480 × 234 × 3)
Type...................................... TFT active matrix, transmissive type
Colour system .... NTSC/PAL compatible
Operating temperature range .... –30 °C to +85 °C
Storage temperature range .... –40 °C to +85 °C

Audio

Maximum power output...... 50 W × 4
50 W × 2 ch/4 Ω + 70 W × 1 ch/2 Ω (for subwoofer)
Continuous power output ... 22 W × 4 (DIN 45324, +B=14.4 V)
Load impedance .... 4 Ω (4 Ω to 8 Ω [2 Ω for 1 ch] allowable)
Preout max output level/output impedance .... 1.7 V/1 kohm

Equaliser (3-Band Parametric Equaliser):
Low
Frequency............ 40/80/100/160 Hz
Q Factor............... 0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain .... ±12dB
Mid
Frequency............ 200/500/1 k/2 kHz
Q Factor............... 0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain .... ±12dB
High
Frequency............ 3.15 k/8 k/10 k/12.5 kHz
Q Factor............... 0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain .... ±12dB
Loudness contour:
Low .... +3.5 dB (100 Hz), +3 dB (10 kHz)
Mid............................... +10 dB (100 Hz), +6.5 dB (10 kHz)
High .... +11 dB (100 Hz), +11 dB (10 kHz)
(volume: –30 dB)
Tone controls:
Bass
Frequency............ 40/63/100/160 Hz
Gain .... ±12dB
Treble
Frequency............ 2.5 k/4 k/6.3 k/10 kHz
Gain .... ±12dB
HPF:
Frequency .... 50/80/125 Hz
Slope............................ –12 dB/oct
Subwoofer:
Frequency .... 50/80/125 Hz
Slope............................ –18 dB/oct
Gain .... ±12dB
Phase........................... Normal/Reverse

DVD Drive

System................................. DVD-Video, Compact disc audio, MP3, WMA, AAC, DivX system
Usable discs .... DVD-Video, Compact disc, MP3, WMA, AAC, DivX
Region number.................... 2
Signal format:
Sampling frequency.... 44.1/48/96 kHz
Number of quantisation bits .... 16/20/24; linear
Frequency response........... 5 Hz to 44 000 Hz (with DVD, at sampling frequency 96 kHz)
Signal-to-noise ratio .... 97 dB (1 kHz) (IEC-A network)
(CD: 96 dB (1 kHz) (IEC-A network))
Dynamic range .... 95 dB (1 kHz)
(CD: 94 dB (1 kHz))
Distortion .... 0.008 % (1 kHz)

Output level:	
Video	1.0 Vp-p/75 Ω (±0.2 V)
Audio	1.4 V (1 kHz, 0 dB)
Number of channels	2 (stereo)
MP3 decoding format	MPEG-1 & 2 Audio Layer 3
WMA decoding format	Ver.9.0 L3
AAC decoding format	MPEG-4 AAC (only encoded by iTunes) : .m4a
DivX decoding format	Home Theater Ver.3, Ver.4, Ver.5.2 : .avi, .divx

FM tuner

Frequency range	87.5 MHz to 108.0 MHz
Usable sensitivity	8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
Signal-to-noise ratio	75 dB (IEC-A network)
Distortion	0.3 % (at 65 dBf, 1 kHz, stereo) 0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response	30 Hz to 15 000 Hz (±3 dB)
Stereo separation	45 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range	531 kHz to 1 602 kHz (9 kHz)
Usable sensitivity	18 μV (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IEC-A network)

LW tuner

Frequency range	153 kHz to 281 kHz (9 kHz)
Usable sensitivity	30 μV (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IEC-A network)

Note:

- Specifications and design are subject to possible modifications without notice due to improvements.

2. EXPLODED VIEWS AND PARTS LIST

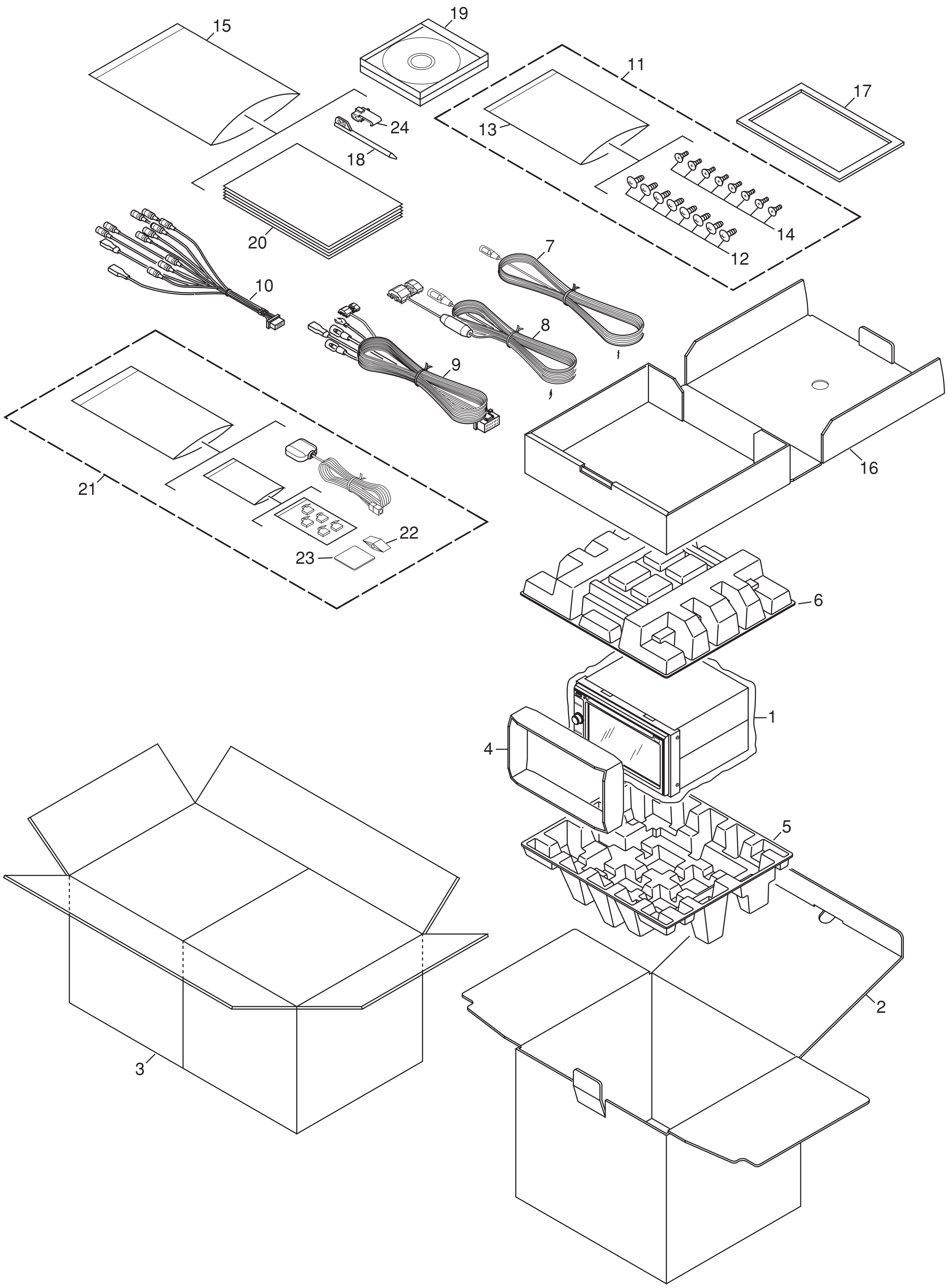
NOTES : • *Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.*

• *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

• *Screw adjacent to▽mark on the product are used for disassembly.*

• *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions,apply as you think it appropriate.)*

2.1 PACKING (UC)



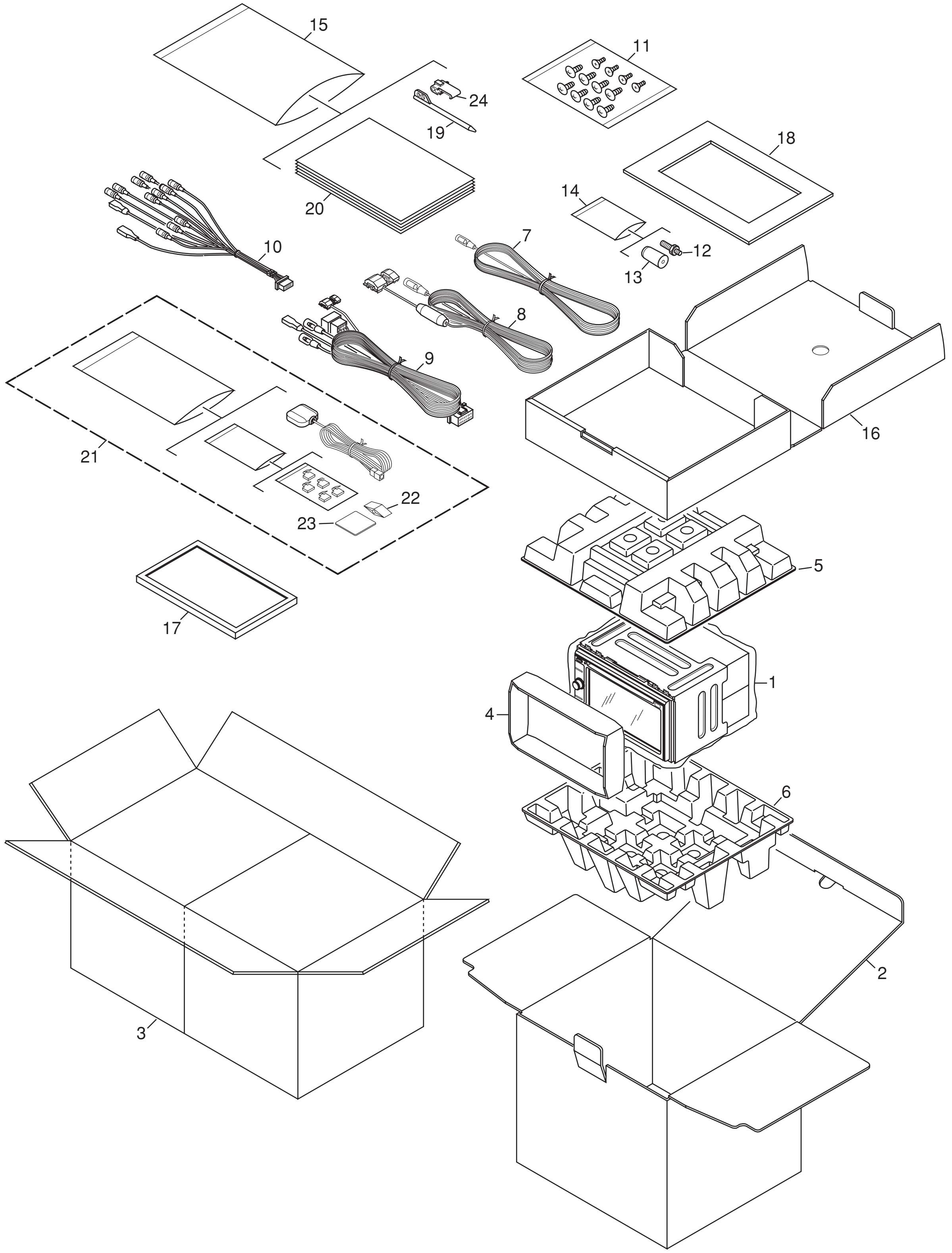
PACKING (UC) SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Polyethylene Bag	CEG1383
	2	Unit Box	CHG6065
	3	Contain Box	CHL6065
	4	Protector	CHP3376
	5	Protector	CHP3315
	6	Protector	CHP3316
	7	Cord	CDE5044
	8	Cord	CDE6825
	9	Cord Assy	CDP1063
	10	Cord Assy	CDP1064
	11	Screw Assy	CEA3797
	12	Screw	BMZ50P060FTC
*	13	Polyethylene Bag	CEG-127
	14	Screw	CMZ50P060FTC
	15	Polyethylene Bag	CEG1116
	16	Sub Unit Box	CHG6064
	17	Panel	CNS9008
	18	Pen	CNV8969
	19	DVD-ROM	CPJ1183
	20-1	Owner's Manual	CRB2325
	20-2	Owner's Manual/POC/FRE	CRB2326
	20-3	Owner's Manual	CRB2327
	20-4	Owner's Manual/POC/FRE	CRB2328
	20-5	Installation Manual	CRD4167
	20-6	Caution Card	CRP1310
*	20-7	Warranty Card	CRY1246
*	20-8	Registration Card	CRY1263
	21	GPS Antenna Assy	CXC4864
	22	Water Proof Pad	CZN5442
	23	Sheet	CZN7008
	24	Connector	CKX1049

Owner's Manual,Installation Manual

Part No.	Language
CRB2325, CRB2327	English
CRB2326, CRB2328	French
CRD4167	English, French

2.2 PACKING (EW5)



PACKING (EW5) SECTION PARTS LIST

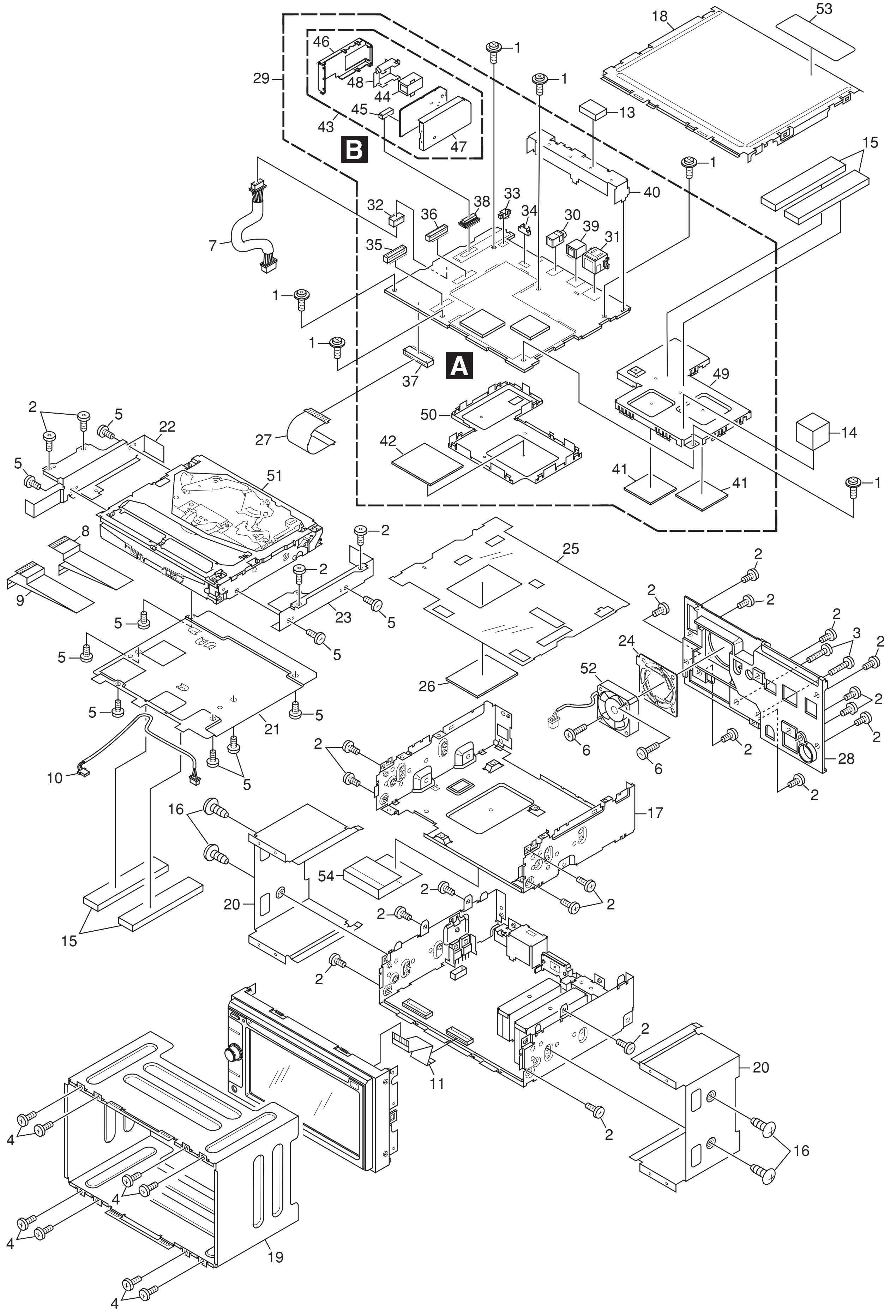
Mark	No.	Description	Part No.
	1	Polyethylene Bag	CEG1382
	2	Unit Box	CHG6066
	3	Contain Box	CHL6066
	4	Protector	CHP3376
	5	Protector	CHP3317
	6	Protector	CHP3318
	7	Cord	CDE5044
	8	Cord	CDE6825
	9	Cord Assy	CDP1062
	10	Cord Assy	CDP1064
	11	Screw Assy	CEA7395
	12	Screw	CBA2081
	13	Bush	CNV3930
*	14	Polyethylene Bag	E36-615
	15	Polyethylene Bag	CEG1116
	16	Sub Unit Box	CHG6064
	17	Panel	CNS8665
	18	Panel	CNS9007
	19	Pen	CNV8969
	20-1	Owner's Manual/PEE/ENG	CRB2329

Mark	No.	Description	Part No.
	20-2	Owner's Manual/PEE/SPE	CRB2330
	20-3	Owner's Manual/PEE/GER	CRB2331
	20-4	Owner's Manual/PEE/FRE	CRB2332
	20-5	Owner's Manual/PEE/ITA	CRB2333
	20-6	Owner's Manual/PEE/DUT	CRB2334
	20-7	Owner's Manual/PEE/ENG	CRB2335
	20-8	Owner's Manual/PEE/SPE	CRB2336
	20-9	Owner's Manual/PEE/GER	CRB2337
	20-10	Owner's Manual/PEE/FRE	CRB2338
	20-11	Owner's Manual/PEE/ITA	CRB2339
	20-12	Owner's Manual/PEE/DUT	CRB2340
	20-13	Installation Manual	CRD4169
	20-14	Caution Card	CRP1310
*	20-15	Warranty Card	CRY1157
	21	GPS Antenna Assy	CXC4864
	22	Water Proof Pad	CZN5442
	23	Sheet	CZN7008
	24	Connector	CKX1049

Owner's Manual,Installation Manual

Part No.	Language
CRB2329, CRB2335	English
CRB2330, CRB2336	Spanish
CRB2331, CRB2337	German
CRB2332, CRB2338	French
CRB2333, CRB2339	Italian
CRB2334, CRB2340	Dutch
CRD4169	English, Spanish, German, French, Italian, Dutch

2.3 EXTERIOR (1)



(1) EXTERIOR (1) SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	ASZ26P050FTC
	2	Screw	BMZ26P050FTC
	3	Screw	BMZ26P160FTB
	4	Screw	See Contrast table(2)
	5	Screw(M2 x 3)	CBA2096
	6	Screw(M3 x 10)	CBA2097
	7	Cord Assy	CDE8156
	8	FFC	CDE8312
	9	FFC	CDE8313
	10	Cord Assy	CDE8339
	11	FFC	CDE8340
	12	•••••	
	13	Gasket	CNN1805
	14	Gasket	CNN1804
	15	Cushion	CNN1807
	16	Screw	See Contrast table(2)
	17	Chassis	CNA2964
	18	Case	CNB3357
	19	Holder	See Contrast table(2)
	20	Holder	See Contrast table(2)
	21	Shield	CND3692
	22	Bracket	CND3697
	23	Bracket	CND3698
	24	Cover	CND3917
	25	Insulator	CNN1404
	26	Sheet	CNN1449
	27	Flexible PCB	CNP8272

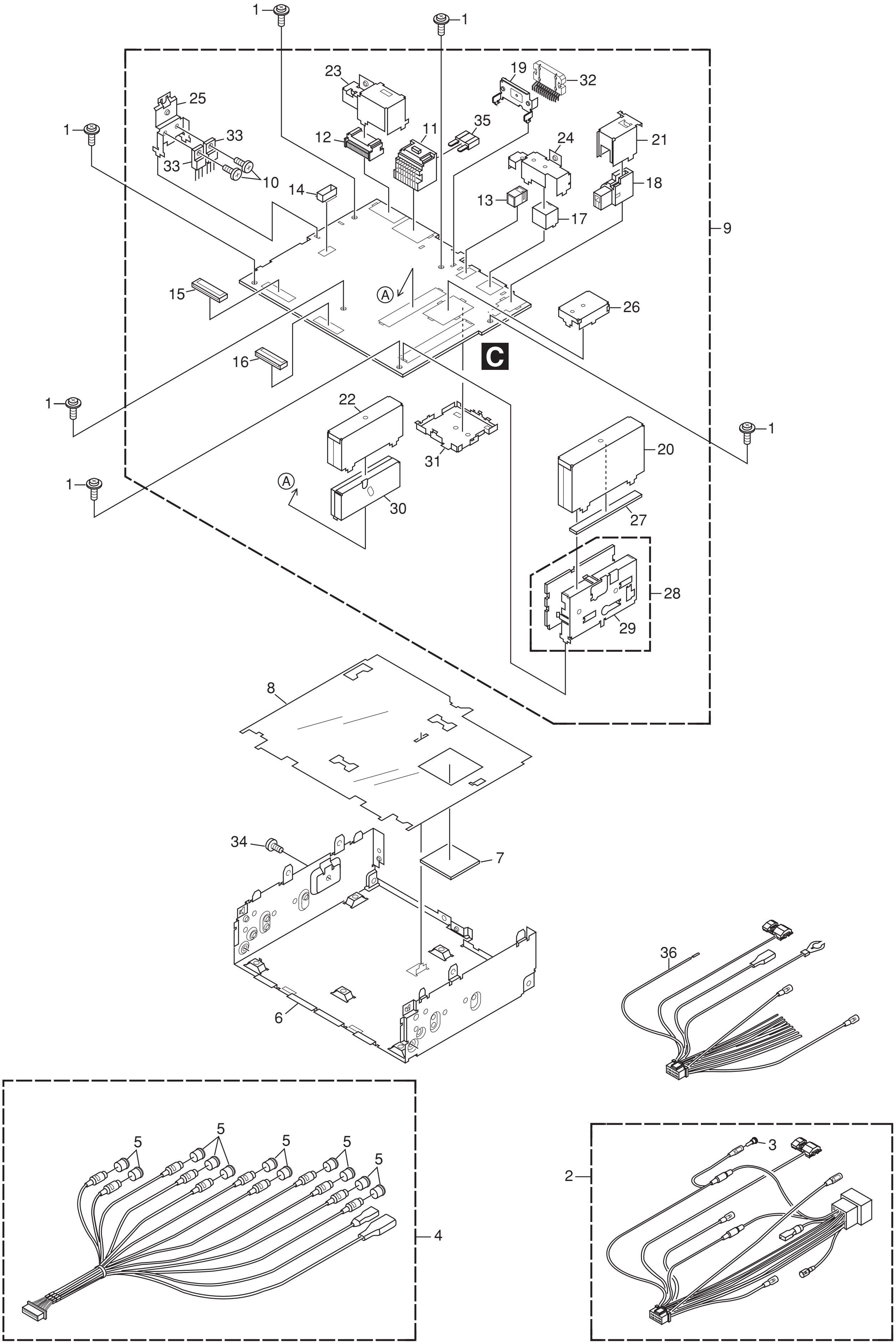
Mark	No.	Description	Part No.
	28	Heat Sink	CNR1888
	29	Navi Mother Unit	See Contrast table(2)
	30	Jack(CN2063)	CKN1043
	31	Connector(CN2065)	CKS3408
	32	Connector(CN2068)	CKS4674
	33	Connector(CN2059)	CKS4822
	34	Connector(CN2061)	CKS4823
	35	Connector(CN2)	CKS5075
	36	Connector(CN2057)	CKS5075
	37	Connector(CN2055)	CKS5110
	38	Connector(CN2060)	CKS5205
	39	Connector(CN2066)	CKS5598
	40	Holder	CND3696
	41	Sheet	CNM9933
	42	Sheet	CNN1449
	43	GPS Unit	See Contrast table(2)
	44	Connector(CN504)	CKS4432
	45	Connector(CN461)	CKS5204
	46	Shield	CNC9191
	47	Shield	CNC9192
	48	Holder	CND1535
	49	Shield Assy	CXC7020
	50	Shield Assy	CXC7021
	51	DVD Mechanism Module(MS5)	CXK6601
	52	Fan Motor	CXM1320
	53	Label	See Contrast table(2)
	54	Shield	CNN1806

(2) CONTRAST TABLE

AVIC-D3/XU/UC and AVIC-D3/XU/EW5 are constructed the same except for the following:

Mark	No.	Description	AVIC-D3/XU/UC	AVIC-D3/XU/EW5
	4	Screw	Not used	BMZ30P060FTC
	16	Screw	Not used	CMZ50P060FTC
	19	Holder	Not used	CND3430
	20	Holder	Not used	CND3431
	29	Navi Mother Unit	CWN2189	CWN2089
	43	GPS Unit	CWX3446	CWX3447
	53	Label	Not used	CAN5448

2.4 EXTERIOR (2)



(1) EXTERIOR (2) SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	ASZ26P050FTC
	2	Cord Assy	See Contrast table(2)
	3	Cap	See Contrast table(2)
	4	Cord Assy	CDP1064
	5	Cap	CNV6727
	6	Chassis	See Contrast table(2)
	7	Sheet	CNM9933
	8	Insulator	CNN1403
	9	AV Unit	See Contrast table(2)
	10	Screw	BMZ26P060FTC
	11	Plug(CN1651)	CKM1376
	12	Connector(CN1701)	CKM1460
	13	Jack(CN1721)	CKN1042
	14	Connector(CN1652)	CKS4674
	15	Connector(CN1711)	CKS5110
	16	Connector(CN1661)	CKS5486
	17	Connector(CN1621)	CKS5683
	18	Antenna Jack(CN1401)	CKX1060
	19	Holder	CNC9921

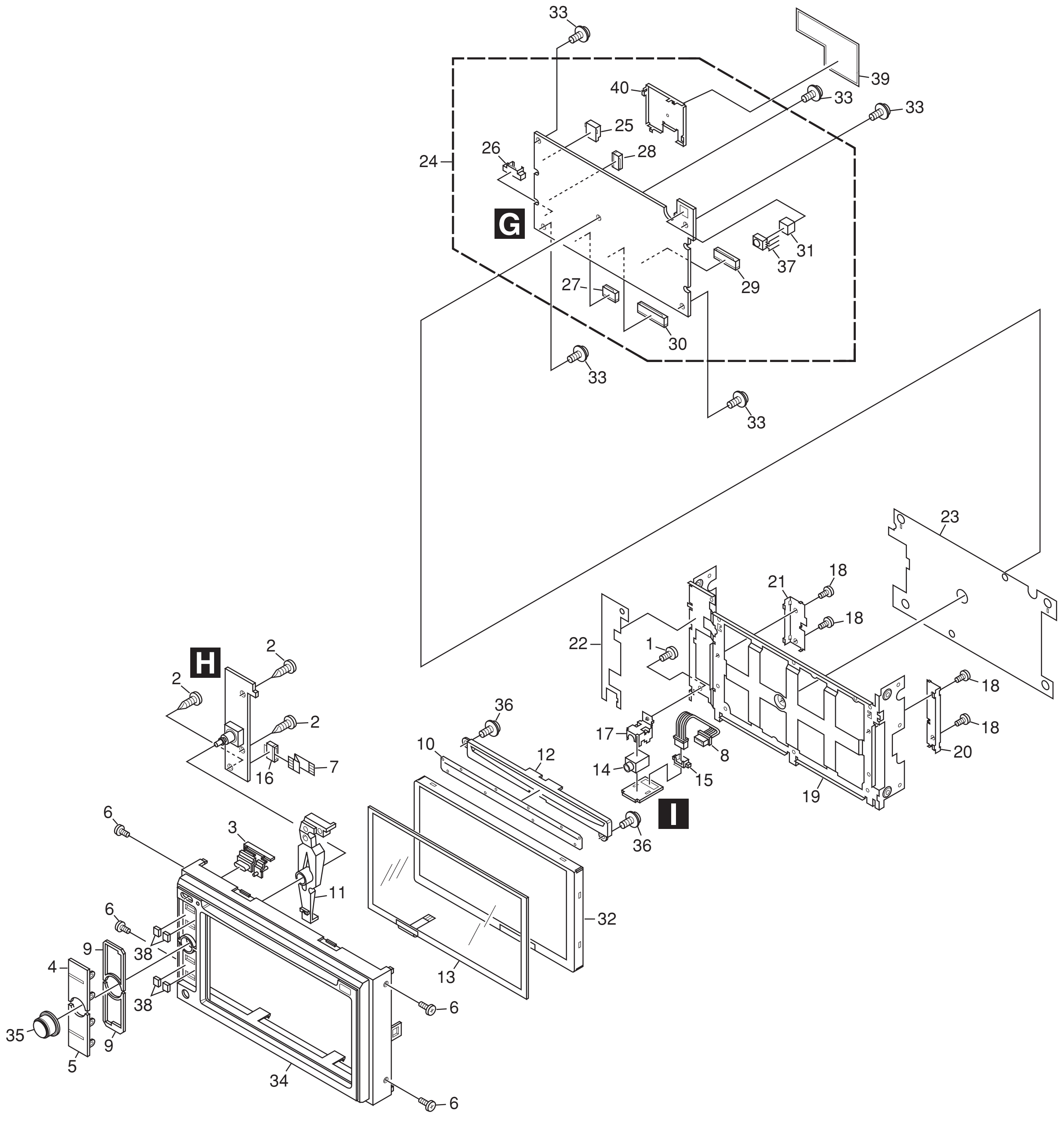
Mark	No.	Description	Part No.
	20	Shield	CND3004
	21	Holder	CND3181
	22	Shield	See Contrast table(2)
	23	Holder	CND3693
	24	Holder	CND3694
	25	Holder	CND3695
	26	Shield	See Contrast table(2)
	27	Sheet	CNM9805
	28	FM/AM Tuner Unit(Y1431)	See Contrast table(2)
	29	Holder	CND1054
	30	Tuner Unit(Y1452)	See Contrast table(2)
	31	Shield Assy	CXC7172
	32	IC(IC1201)	PAL007C
	33	IC(IC1821,1841)	BA00C0WCP-V5
	34	Screw	BMZ26P050FTC
⚠	35	Fuse(10A)	CEK1208
	36	Cord Assy	See Contrast table(2)

(2) CONTRAST TABLE

AVIC-D3/XU/UC and AVIC-D3/XU/EW5 are constructed the same except for the following:

Mark	No.	Description	AVIC-D3/XU/UC	AVIC-D3/XU/EW5
	2	Cord Assy	Not used	CDP1062
	3	Cap	Not used	CKX-003
	6	Chassis	CNA2971	CNA2963
	9	AV Unit	CWN2190	CWN2090
	22	Shield	Not used	CND3188
	26	Shield	Not used	CND3769
	28	FM/AM Tuner Unit(Y1431)	CWE1952	CWE1951
	30	Tuner Unit(Y1452)	Not used	CWE2023
	36	Cord Assy	CDP1063	Not used

2.5 EXTERIOR (3)



(1) EXTERIOR (3) SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BMZ26P030FTC
	2	Screw	BPZ20P080FTC
	3	Button	CAC9994
	4	Button	CAC9995
	5	Button	CAC9996
	6	Screw(M2 x 3)	CBA1797
	7	FFC	CDE8341
	8	Cord Assy	CDE8343
	9	Cushion	CNN1429
	10	Cover	CNN1432
	11	Lighting Conductor	CNV9371
	12	Holder	CNV9375
	13	Touch Panel	CSX1114
	14	Jack(CN5552)	CKN1046
	15	Connector(CN4825)	CKS4825
	16	Connector(CN5503)	CKS5037
	17	Holder	CND3755
	18	Screw(M2 x 2)	CBA1771
	19	Holder	CND3757
	20	Holder	CND3758

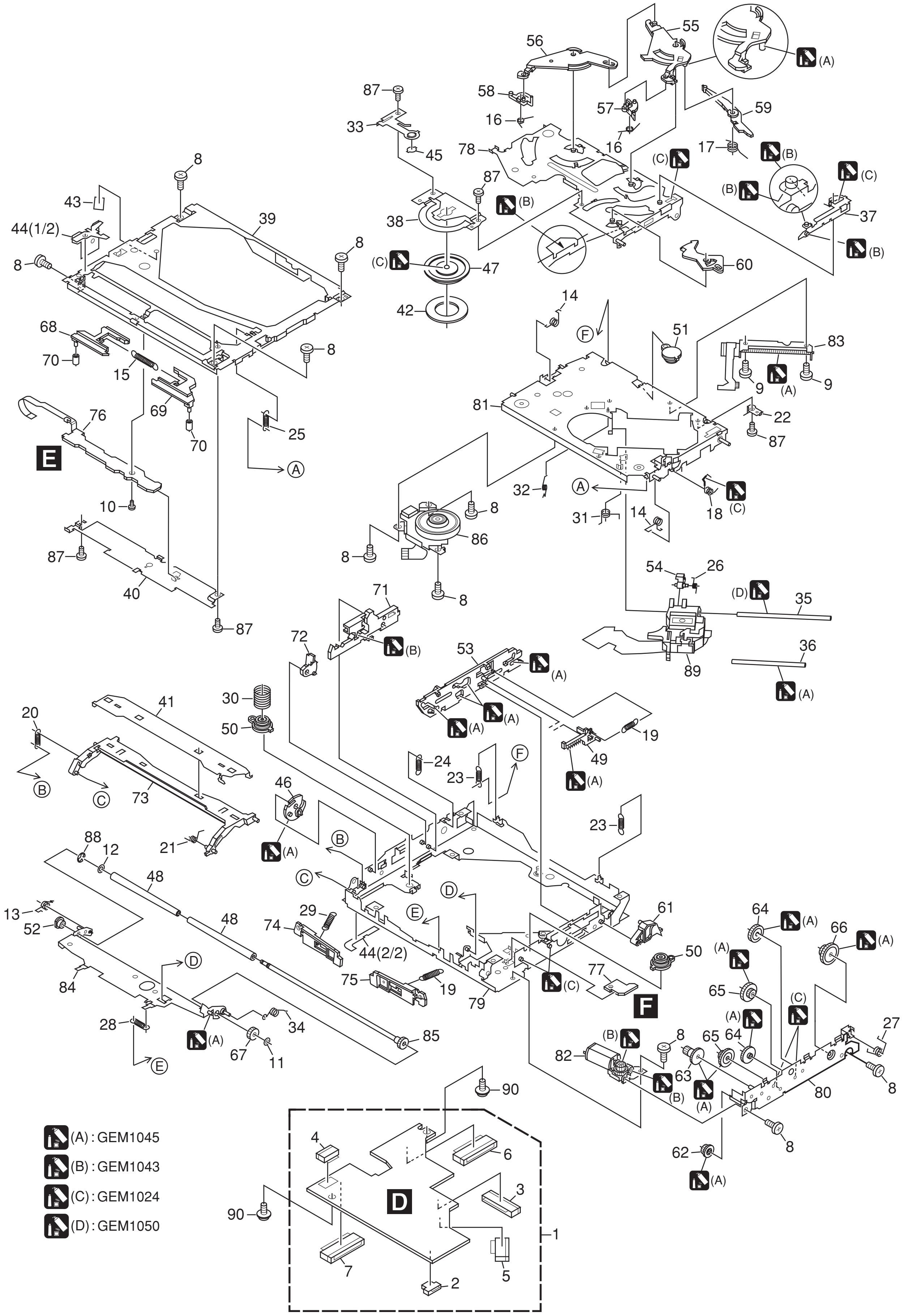
Mark	No.	Description	Part No.
	21	Holder	CND3759
	22	Insulator	CNN1431
	23	Insulator	CNN1444
	24	Monitor Unit	See Contrast table(2)
	25	Connector(CN5006)	CKS4428
	26	Connector(CN5004)	CKS4825
	27	Connector(CN5002)	CKS5033
	28	Connector(CN5003)	CKS5037
	29	Connector(CN5007)	CKS5050
	30	Connector(CN5001)	CKS5054
	31	Cushion	CNN1445
	32	LCD Module	CWX3435
	33	Screw	PMB20P040FTC
	34	Grille Assy	See Contrast table(2)
	35	Knob Assy	CXC7160
	36	Screw	IMS26P040FTC
	37	REMOTE IC(IC5307)	GP1UX51RK
	38	Cushion	CNN1704
	39	Shield	CNN1731
	40	Shield	CND3932

(2) CONTRAST TABLE

AVIC-D3/XU/UC and AVIC-D3/XU/EW5 are constructed the same except for the following:

Mark	No.	Description	AVIC-D3/XU/UC	AVIC-D3/XU/EW5
	24	Monitor Unit	CWN2188	CWN2091
	34	Grille Assy	CXC7159	CXC7158

2.6 DVD MECHANISM MODULE



(A) : GEM1045
(B) : GEM1043
(C) : GEM1024
(D) : GEM1050

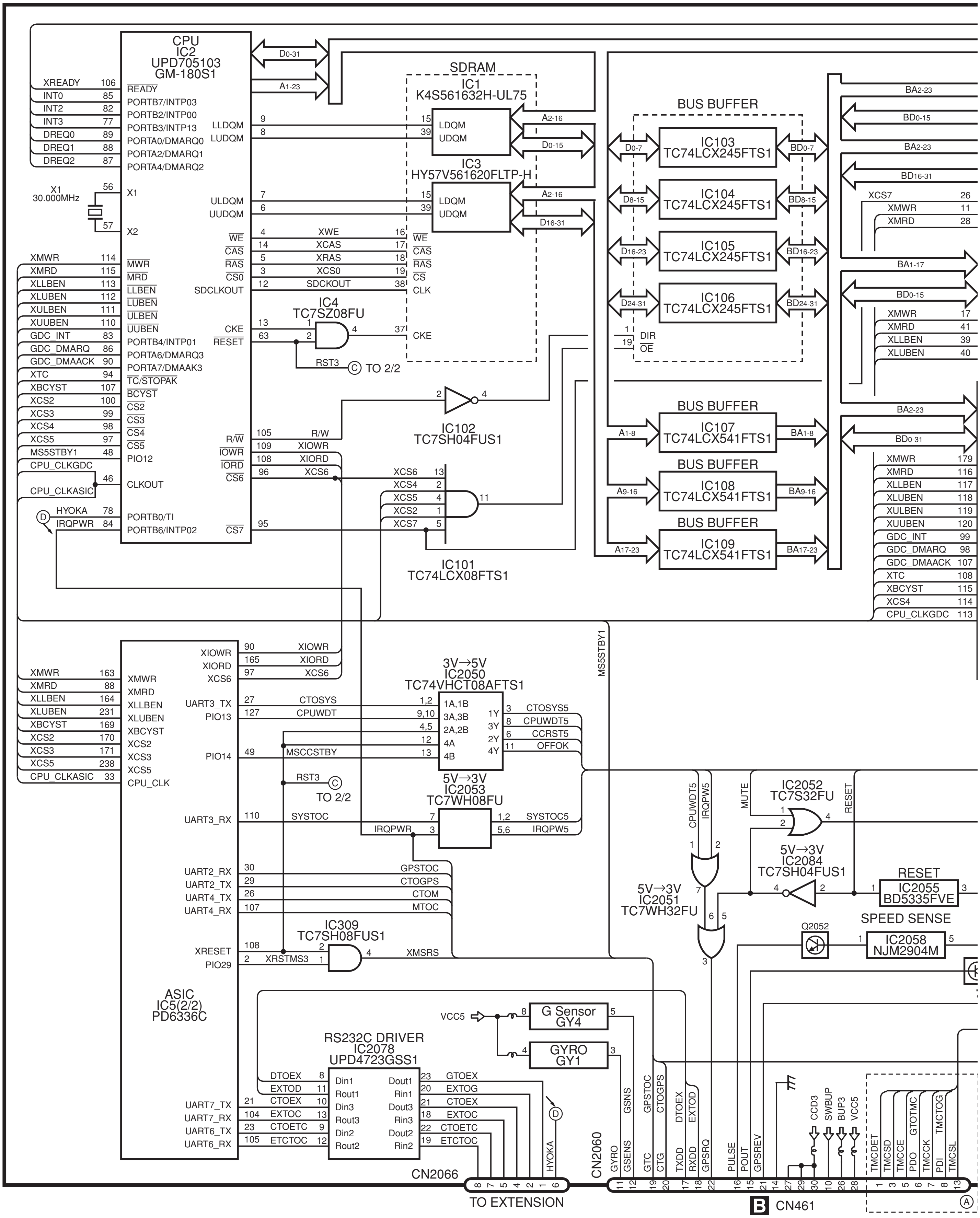
DVD MECHANISM MODULE SECTION PARTS LIST

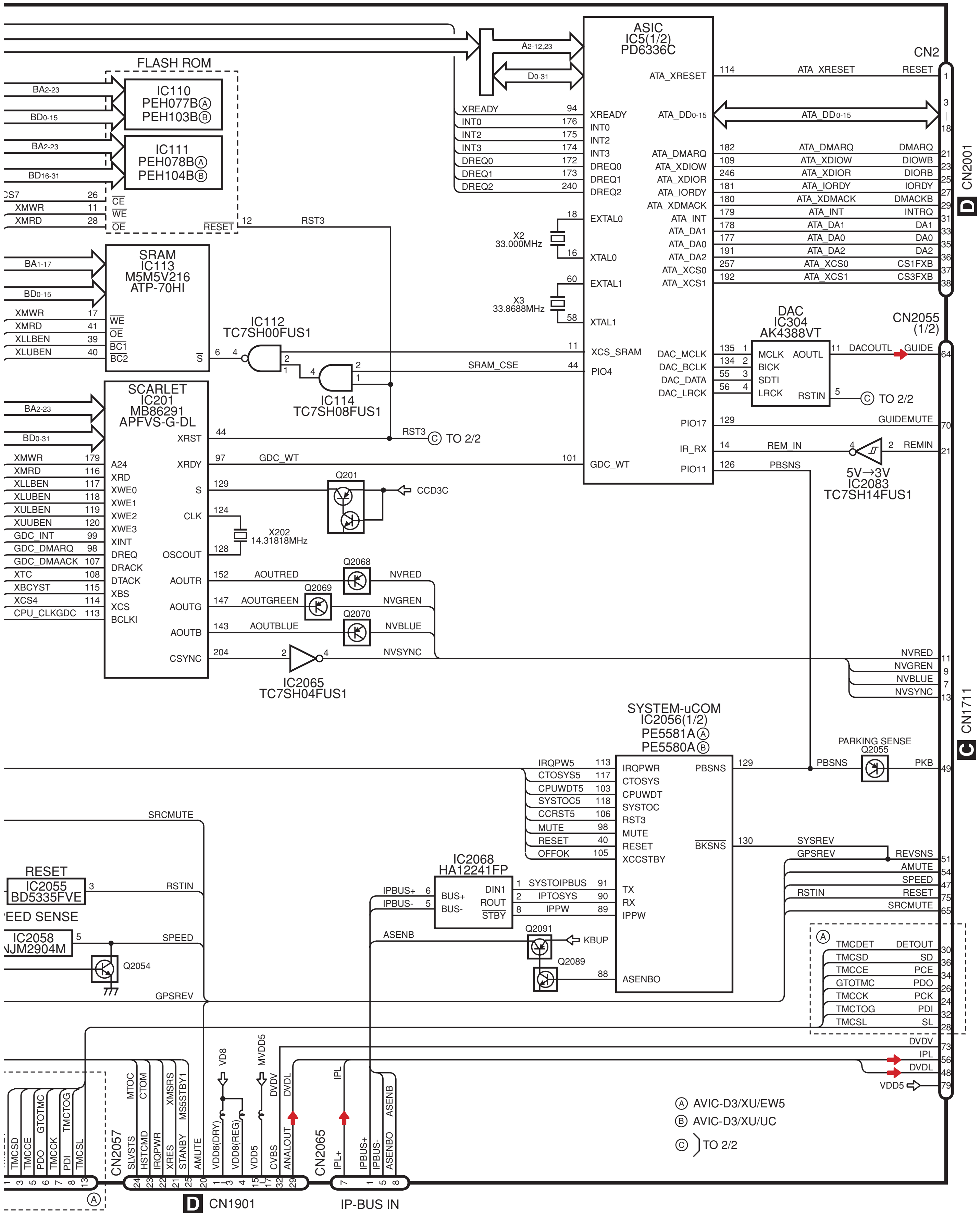
Mark	No.	Description	Part No.
	1	DVD Core Unit	CWX3401
	2	Connector(CN1852)	CKS4817
	3	Connector(CN1101)	CKS4841
	4	Connector(CN1301)	CKS5017
	5	Connector(CN1201)	CKS5043
	6	Connector(CN1901)	CKS5054
	7	Connector(CN2001)	CKS5054
	8	Screw	BMZ20P020FTC
	9	Screw	BMZ20P025FNI
	10	Screw	CBA1787
	11	Washer	CBF1038
	12	Washer	CBF1064
	13	Spring	CBH2586
	14	Spring	CBH2588
	15	Spring	CBH2589
	16	Spring	CBH2590
	17	Spring	CBH2591
	18	Spring	CBH2592
	19	Spring	CBH2593
	20	Spring	CBH2596
	21	Spring	CBH2597
	22	Spring	CBL1726
	23	Spring	CBH2599
	24	Spring	CBH2600
	25	Spring	CBH2601
	26	Spring	CBH2926
	27	Spring	CBH2604
	28	Spring	CBH2605
	29	Spring	CBH2710
	30	Spring	CBH2711
	31	Spring	CBH2935
	32	Spring	CBH2890
	33	Spring	CBL1689
	34	Spring	CBH2898
	35	Shaft	CLA4206
	36	Shaft	CLA4701
	37	Lever	CNC9933
	38	Holder	CND2643
	39	Frame	CND2250
	40	Holder	CND2251
	41	Holder	CND2642
	42	Sheet	CNM6883
	43	Sheet	CNM8697
	44	Sheet	CNM9658
	45	Sheet	CNM9407
	46	Cam	CNV7156
	47	Clamper	CNV7158
	48	Roller	CNV7165
	49	Rack	CNV7175
	50	Damper	CNV9061
	51	Damper	CNV9062
	52	Collar	CNV8845
	53	Lever	CNV8865
	54	Rack	CNV9063
	55	Arm	CNV8867
	56	Arm	CNV8868
	57	Arm	CNV9577
	58	Arm	CNV8870
	59	Arm	CNV8871
	60	Arm	CNV8872
	61	Arm	CNV8873
	62	Gear	CNV8874
	63	Gear	CNV8875
	64	Gear	CNV8876
	65	Gear	CNV8877
	66	Gear	CNV8878
	67	Gear	CNV8879
	68	Lever	CNV8903
	69	Lever	CNV8904
	70	Roller	CNV8905
	71	Lever	CNV8908
	72	Arm	CNV8909
	73	Guide	CNV8910
	74	Arm	CNV9116
	75	Arm	CNV9117
	76	Compound Unit(A)	CWX3154
	77	Compound Unit(B)	CWX3394
*	78	Arm Unit	CXC7872
	79	Frame Unit	CXC6442
	80	Bracket Unit	CXB8685
	81	Chassis Unit	CXC6443
	82	Motor Unit(LOAD)(M1)	CXC4912
	83	Motor(STEPPING)(M2)	CXM1364
	84	Arm Unit	CXC5486
	85	Roller Unit	CXC5708
	86	Motor(SPDL)(M3)	CXM1362
	87	Screw	JFZ20P018FTC
	88	Washer	YE20FTC
	89	Pickup Unit(Service)	CXX2118
	90	Screw	IMS20P030FTC

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

A NAVI MOTHER UNIT(1/2)





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PEH103BⒷ
IC111
PEH078BⒶ
PEH104BⒷ
BA2-23
BD0-15
BA2-23
BD16-31
CS7 26
XMWR 11
XMRD 28
CE
WE
OE
RESET 12
RST3
SRAM
IC113
M5M5V216
ATP-70HI
BA1-17
BD0-15
XMWR 17
XMRD 41
XLLBEN 39
XLUBEN 40
WE
OE
BC1
BC2
SI 6
IC112
TC7SH00FUS1
IC114
TC7SH08FUS1
SRAM_CSE
SCARLET
IC201
MB86291
APFVS-G-DL
BA2-23
BD0-31
XMWR 179
XMRD 116
XLLBEN 117
XLUBEN 118
XULBEN 119
XUUBEN 120
GDC_INT 99
GDC_DMARQ 98
GDC_DMAACK 107
XTC 108
XBCYST 115
XCS4 114
CPU_CLKGDC 113
A24
XRD
XWE0
XWE1
XWE2
XWE3
XINT
DREQ
DRACK
DTACK
XBS
XCS
BCLKI
XRST 44
XRDY 97
S 129
CLK 124
OSCOUT 128
AOUTR 152
AOUTG 147
AOUTB 143
CSYNC 204
RST3 Ⓒ TO 2/2
GDC_WT 101
Q201
CCD3C
X202
14.31818MHz
Q2068 AOUTRED NVRED
Q2069 AOUTGREEN NVGREN
Q2070 AOUTBLUE NVBLUE
NVSYNC
IC2065
TC7SH04FUS1
ASIC
IC5(1/2)
PD6336C
A2-12,23
D0-31
XREADY 94
INT0 176
INT2 175
INT3 174
DREQ0 172
DREQ1 173
DREQ2 240
X2
33.000MHz
EXTAL0 18
XTAL0 16
X3
33.8688MHz
EXTAL1 60
XTAL1 58
XCS_SRAM 11
PIO4 44
GDC_WT
ATA_XRESET 114
ATA_DD0-15
ATA_DMARQ 182
ATA_XDIOW 109
ATA_XDIOR 246
ATA_IORDY 181
ATA_XDMACK 180
ATA_INT 179
ATA_DA1 178
ATA_DA0 177
ATA_DA2 191
ATA_XCS0 257
ATA_XCS1 192
DAC_MCLK 135
DAC_BCLK 134
DAC_DATA 55
DAC_LRCK 56
PIO17 129
IR_RX 14
PIO11 126
CN2
RESET 1
3 | 18
DMARQ 21
DIOWB 23
DIORB 25
IORDY 27
DMACKB 29
INTRQ 31
DA1 33
DA0 35
DA2 36
CS1FXB 37
CS3FXB 38
D CN2001
DAC
IC304
AK4388VT
MCLK
BICK
SDTI
LRCK
AOUTL 11
RSTIN 5
DACOUTL
GUIDE 64
Ⓒ TO 2/2
CN2055 (1/2)
GUIDEMUTE 70
REM_IN
REMIN 21
5V→3V
IC2083
TC7SH14FUS1
PBSNS
NVRED 11
NVGREN 9
NVBLUE 7
NVSYNC 13
C CN1711
SYSTEM-uCOM
IC2056(1/2)
PE5581AⒶ
PE5580AⒷ
IRQPW5 113
CTOSYS5 117
CPUWDT5 103
SYSTOC5 118
CCRST5 106
MUTE 98
RESET 40
OFFOK 105
IRQPWR
CTOSYS
CPUWDT
SYSTOC
RST3
MUTE
RESET
XCCSTBY
PBSNS 129
BKSNS 130
TX
RX
IPPW
ASENBO 88
PARKING SENSE
Q2055
PKB 49
SYSREV
GPSREV
REVSNS 51
AMUTE 54
SPEED 47
RSTIN
RESET 75
SRCMUTE 65
IC2068
HA12241FP
IPBUS+ 6
IPBUS- 5
BUS+
BUS-
DIN1 1
ROUT 2
STBY 8
SYSTOIPBUS 91
IPTOSYS 90
IPPW 89
ASENB
Q2091
KBUP
Q2089
Ⓐ
TMCDET DETOUT 30
TMCSD SD 36
TMCCE PCE 34
GTOTMC PDO 26
TMCCK PCK 24
TMCTOG PDI 32
TMCSL SL 28
DVDV 73
IPL 56
DVDL 48
VDD5 79
SRCMUTE
RESET
IC2055
BD5335FVE 3
RSTIN
SPEED SENSE
IC2058
NJM2904M 5
SPEED
Q2054
GPSREV
TMCSD 1
TMCCE 3
PDO 5
TMCCK 6
PDI 7
TMCSL 8
GTOTMC
TMCTOG 13
Ⓐ
CN2057
SLVSTS 24
HSTCMD 23
IRQPWR 22
XRES 21
STANBY 25
AMUTE 20
MTOC
CTOM
XMSRS
MS5STBY1
VDD8
VDD8(DRY) 1
VDD8(REG) 3
VDD5 4
MVDD5
DVDV
DVDL
CVBS 15 17
ANALOUT 32 29
D CN1901
CN2065
IPL
IPL+ 7
IPBUS+ 1
IPBUS- 5
ASENBO 8
ASENB
IP-BUS IN
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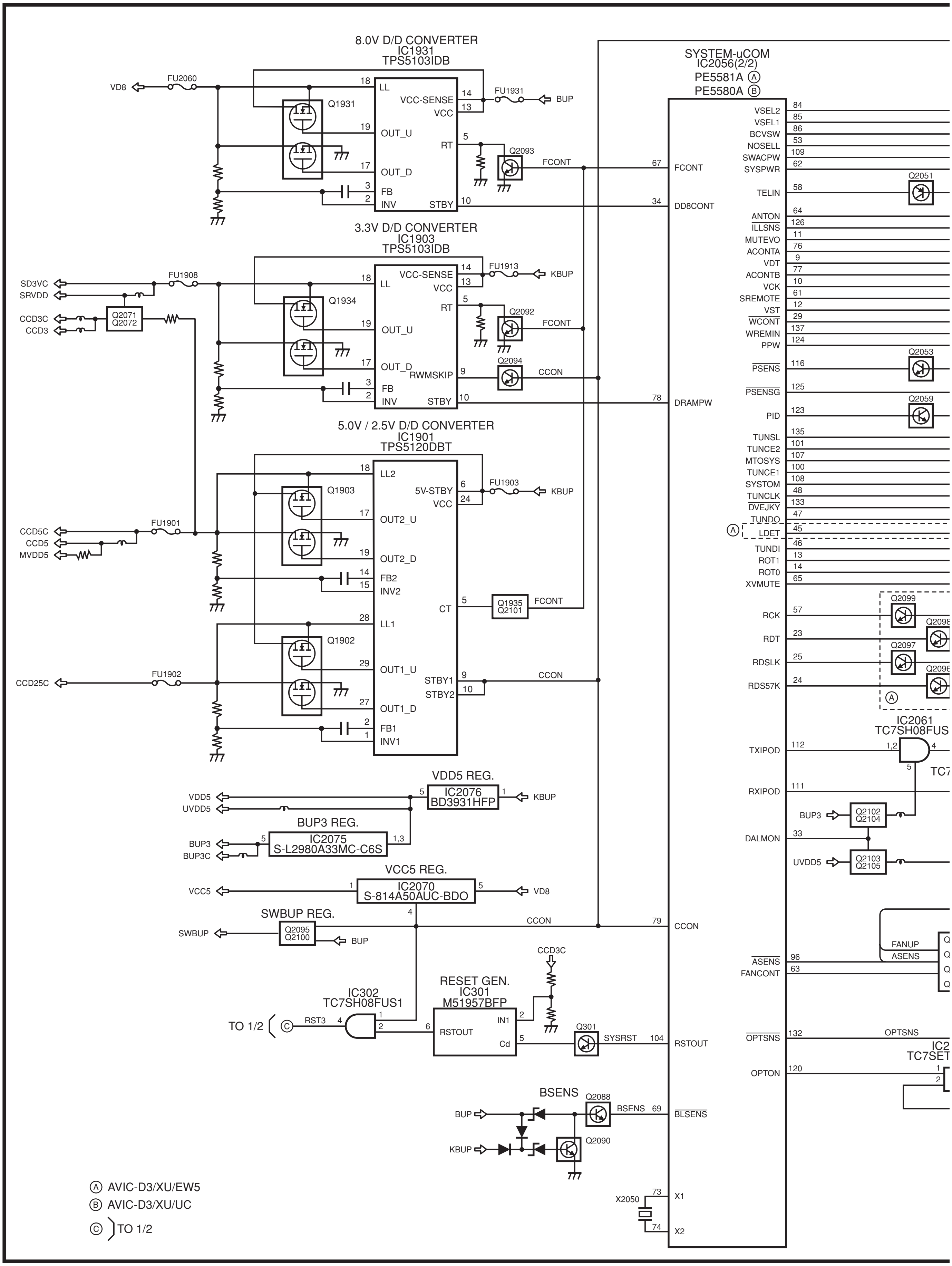
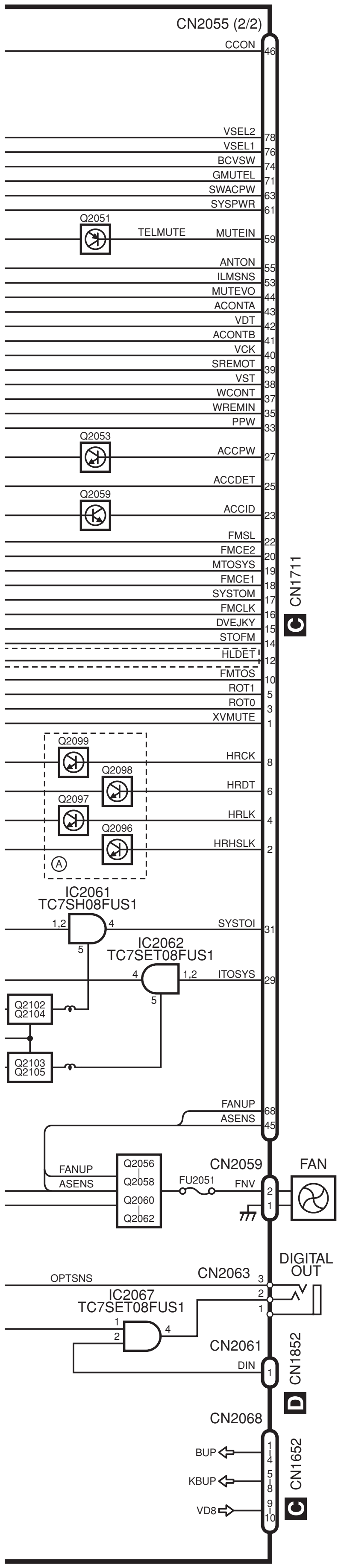
Ⓑ AVIC-D3/XU/UC
Ⓒ } TO 2/2

A NAVI MOTHER UNIT(2/2)



Ⓐ AVIC-D3/XU/EW5
Ⓑ AVIC-D3/XU/UC
Ⓒ } TO 1/2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GMUTEL 71
SWACPW 63
SYSPWR 61
Q2051
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MUTEIN 59
ANTON 55
ILMSNS 53
MUTEVO 44
ACONTA 43
VDT 42
ACONTB 41
VCK 40
SREMOT 39
VST 38
WCONT 37
WREMIN 35
PPW 33
Q2053
ACCPW 27
ACCDET 25
Q2059
ACCID 23
FMSL 22
FMCE2 20
MTOSYS 19
FMCE1 18
SYSTOM 17
FMCLK 16
DVEJKY 15
STOFM 14
HLDET 12
FMTOS 10
ROT1 5
ROT0 3
XVMUTE 1
C CN1711
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HRCK 8
Q2098
HRDT 6
Q2097
HRLK 4
Q2096
HRHSLK 2
A
IC2061
TC7SH08FUS1
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4
5
SYSTOI 31
IC2062
TC7SET08FUS1
4
1,2
5
ITOSYS 29
Q2102
Q2104
Q2103
Q2105
FANUP 68
ASENS 45
FANUP
ASENS
Q2056
Q2058
Q2060
Q2062
CN2059
FU2051
FNV
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1
FAN
DIGITAL OUT
OPTSNS
CN2063
3
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1
2
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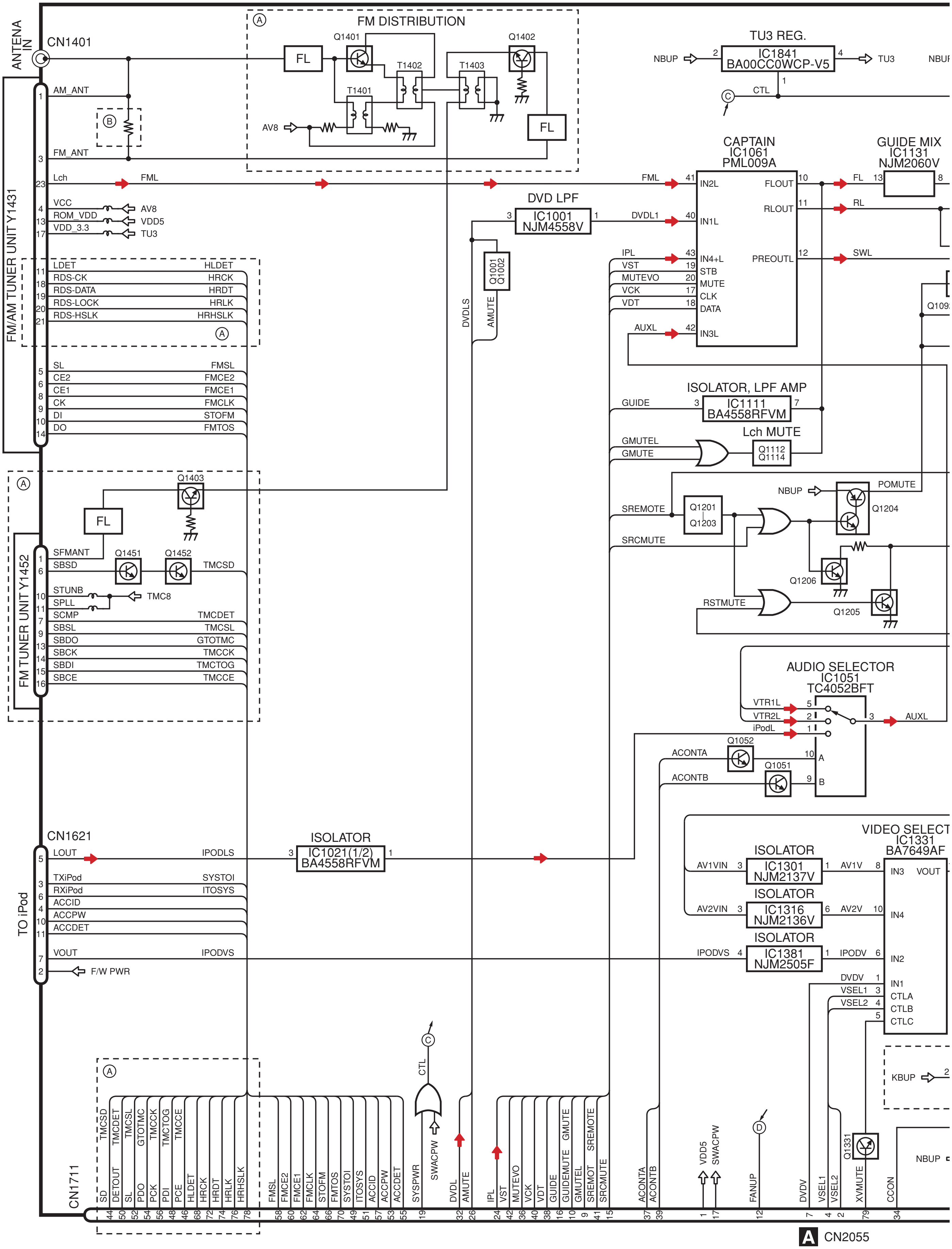
CN1852
D
CN2068
BUP 1 4
KBUP 5 8
VD8 9 10
CN1652
C

C AV UNIT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FM_ANT
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FL
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Q1402
T1401
T1402
T1403
AV8
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IC1841
BA00CC0WCP-V5
NBUP
TU3
CTL
FM/AM TUNER UNIT Y1431
Lch
FML
VCC
ROM_VDD
VDD_3.3
AV8
VDD5
TU3
LDET
RDS-CK
RDS-DATA
RDS-LOCK
RDS-HSLK
HLDET
HRCK
HRDT
HRLK
HRHSLK
SL
CE2
CE1
CK
DI
DO
FMSL
FMCE2
FMCE1
FMCLK
STOFM
FMTOS
DVD LPF
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NJM4558V
DVDL1
DVDLS
AMUTE
Q1001
Q1002
CAPTAIN
IC1061
PML009A
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IN1L
IN4+L
STB
MUTE
CLK
DATA
IN3L
FLOUT
RLOUT
PREOUTL
IPL
VST
MUTEVO
VCK
VDT
AUXL
GUIDE MIX
IC1131
NJM2060V
FL
RL
SWL
Q109
ISOLATOR, LPF AMP
IC1111
BA4558RFVM
GUIDE
GMUTEL
GMUTE
Lch MUTE
Q1112
Q1114
FM TUNER UNIT Y1452
Q1403
Q1451
Q1452
SFMANT
SBSD
STUNB
SPLL
SCMP
SBSL
SBDO
SBCK
SBDI
SBCE
TMCSD
TMC8
TMCDET
TMCSL
GTOTMC
TMCCK
TMCTOG
TMCCE
SREMOTE
SRCMUTE
Q1201
Q1203
NBUP
POMUTE
Q1204
Q1206
RSTMUTE
Q1205
AUDIO SELECTOR
IC1051
TC4052BFT
VTR1L
VTR2L
iPodL
AUXL
ACONTA
ACONTB
Q1052
Q1051
CN1621
TO iPod
LOUT
TXiPod
RXiPod
ACCID
ACCPW
ACCDET
VOUT
F/W PWR
IPODLS
SYSTOI
ITOSYS
IPODVS
ISOLATOR
IC1021(1/2)
BA4558RFVM
VIDEO SELECT
IC1331
BA7649AF
IN3
VOUT
IN4
IN2
IN1
CTLA
CTLB
CTLC
ISOLATOR
IC1301
NJM2137V
AV1VIN
AV1V
ISOLATOR
IC1316
NJM2136V
AV2VIN
AV2V
ISOLATOR
IC1381
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IPODV
DVDV
VSEL1
VSEL2
KBUP
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PCK
PDI
PCE
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HRDT
HRLK
HRHSLK
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SWACPW
DVDL
AMUTE
IPL
VST
MUTEVO
VCK
VDT
GUIDE
GUIDEMUTE
GMUTEL
GMUTE
SREMOT
SREMOTE
SRCMUTE
ACONTA
ACONTB
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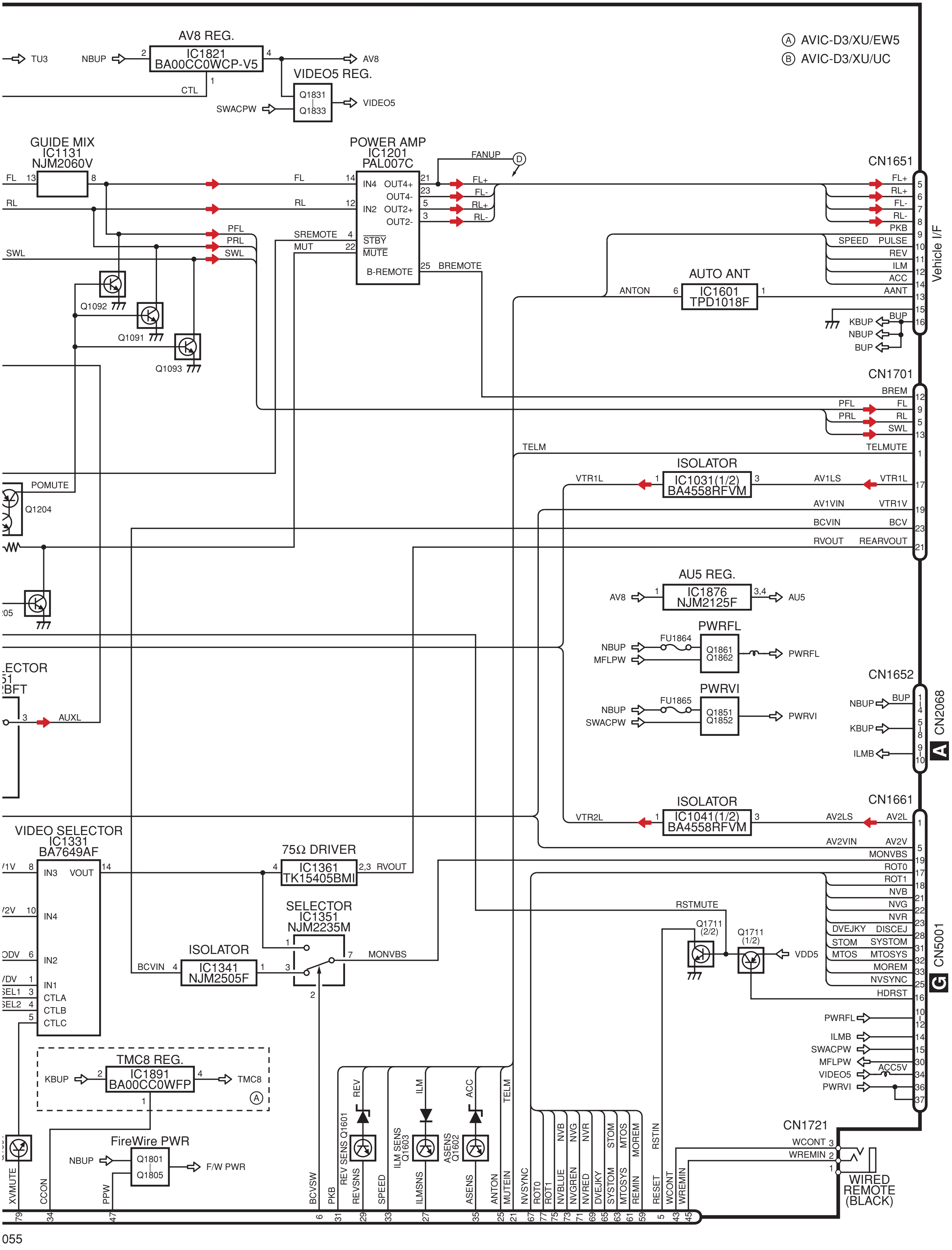
SWACPW
FANUP
DVDV
VSEL1
VSEL2
XVMUTE
CCON
A CN2055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Ⓑ AVIC-D3/XU/UC
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IC1821
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TU3
NBUP
AV8
CTL
VIDEO5 REG.
Q1831
Q1833
VIDEO5
SWACPW
GUIDE MIX
IC1131
NJM2060V
POWER AMP
IC1201
PAL007C
FANUP
FL
RL
SWL
PFL
PRL
SREMOTE
MUT
IN4 OUT4+
OUT4-
IN2 OUT2+
OUT2-
STBY
MUTE
B-REMOTE
BREMOTE
FL+
FL-
RL+
RL-
Q1092
Q1091
Q1093
CN1651
Vehicle I/F
PKB
SPEED PULSE
REV
ILM
ACC
AANT
BUP
KBUP
NBUP
AUTO ANT
IC1601
TPD1018F
ANTON
CN1701
BREM
TELM
TELMUTE
ISOLATOR
IC1031(1/2)
BA4558RFVM
VTR1L
AV1LS
AV1VIN
VTR1V
BCVIN
BCV
RVOUT
REARVOUT
POMUTE
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IC1876
NJM2125F
AU5
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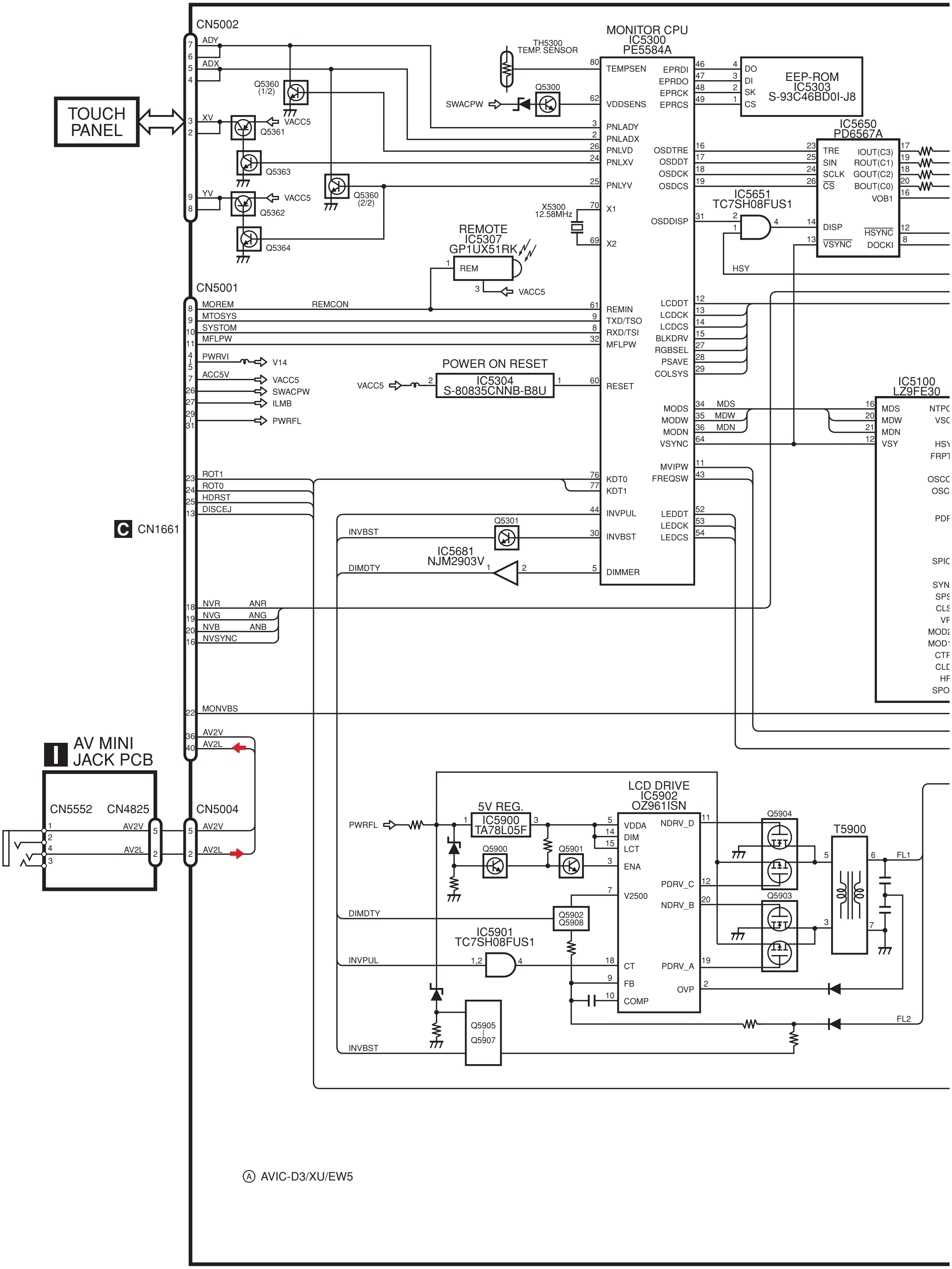
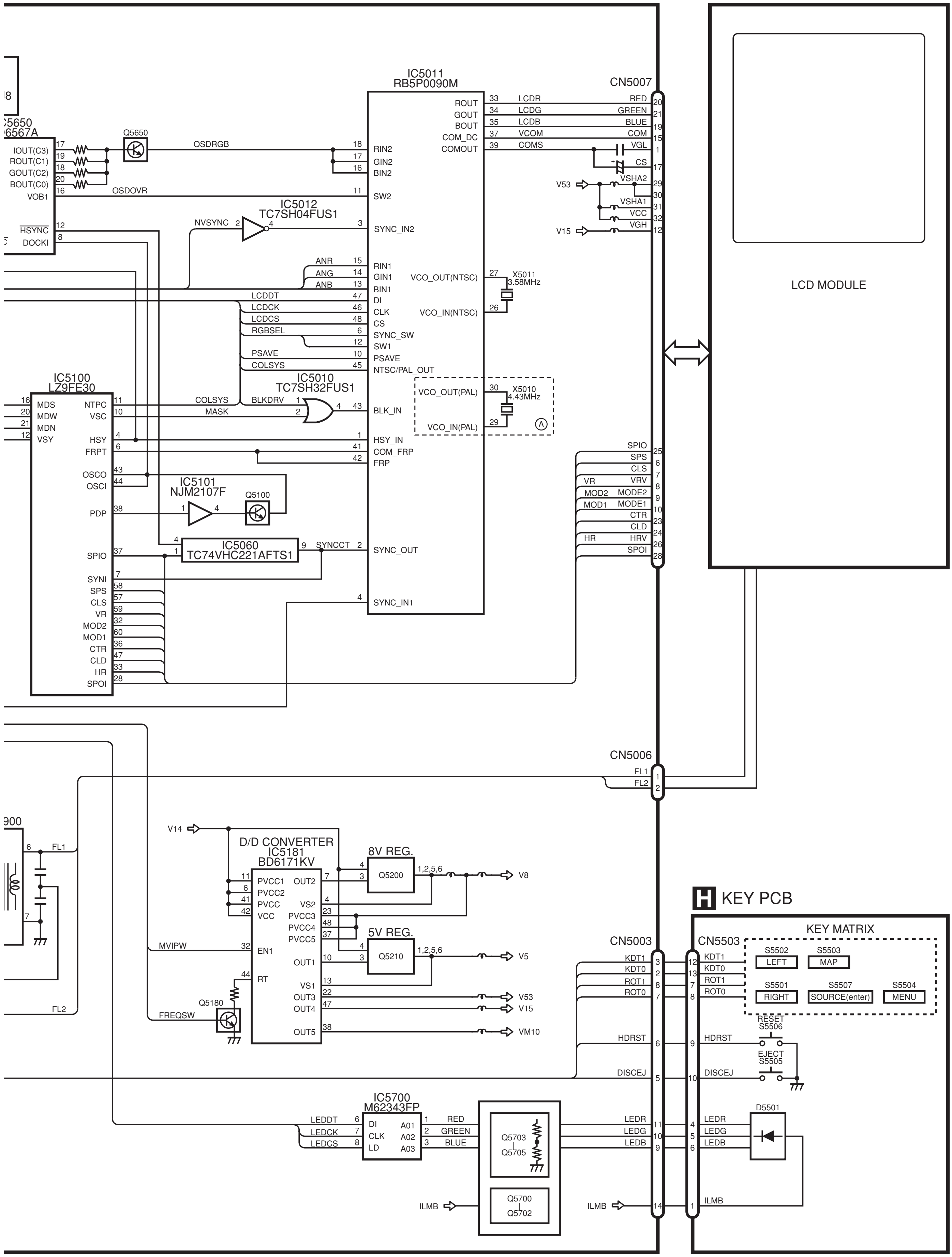
FU1864
MFLPW
Q1861
Q1862
PWRVI
FU1865
Q1851
Q1852
CN1652
CN2068
A
ILMB
ECTOR
51
BFT
AUXL
CN1661
ISOLATOR
IC1041(1/2)
BA4558RFVM
VTR2L
AV2LS
AV2L
AV2VIN
AV2V
MONVBS
ROT0
ROT1
NVB
NVG
NVR
DVEJKY DISCEJ
STOM SYSTOM
MTOS MTOSYS
MOREM
NVSYNC
HDRST
CN5001
G
VIDEO SELECTOR
IC1331
BA7649AF
IN3 VOUT
IN4
IN2
IN1
CTLA
CTLB
CTLC
75Ω DRIVER
IC1361
TK15405BMI
RVOUT
SELECTOR
IC1351
NJM2235M
MONVBS
ISOLATOR
IC1341
NJM2505F
BCVIN
RSTMUTE
Q1711 (2/2)
Q1711 (1/2)
VDD5
SWACPW
ACC5V
TMC8 REG.
IC1891
BA00CC0WFP
KBUP
TMC8
FireWire PWR
Q1801
Q1805
F/W PWR
REV SENS Q1601
ILM SENS Q1603
ASENS Q1602
XVMUTE
CCON
PPW
BCVSW
PKB
REVSNS
SPEED
ILMSNS
ASENS
ANTON
MUTEIN
NVSYNC
ROT0
ROT1
NVBLUE
NVGREN
NVRED
DVEJKY
SYSTOM
MTOSYS
REMIN
MOREM
RSTIN
RESET
WCONT
WREMIN
CN1721
WIRED REMOTE (BLACK)
055

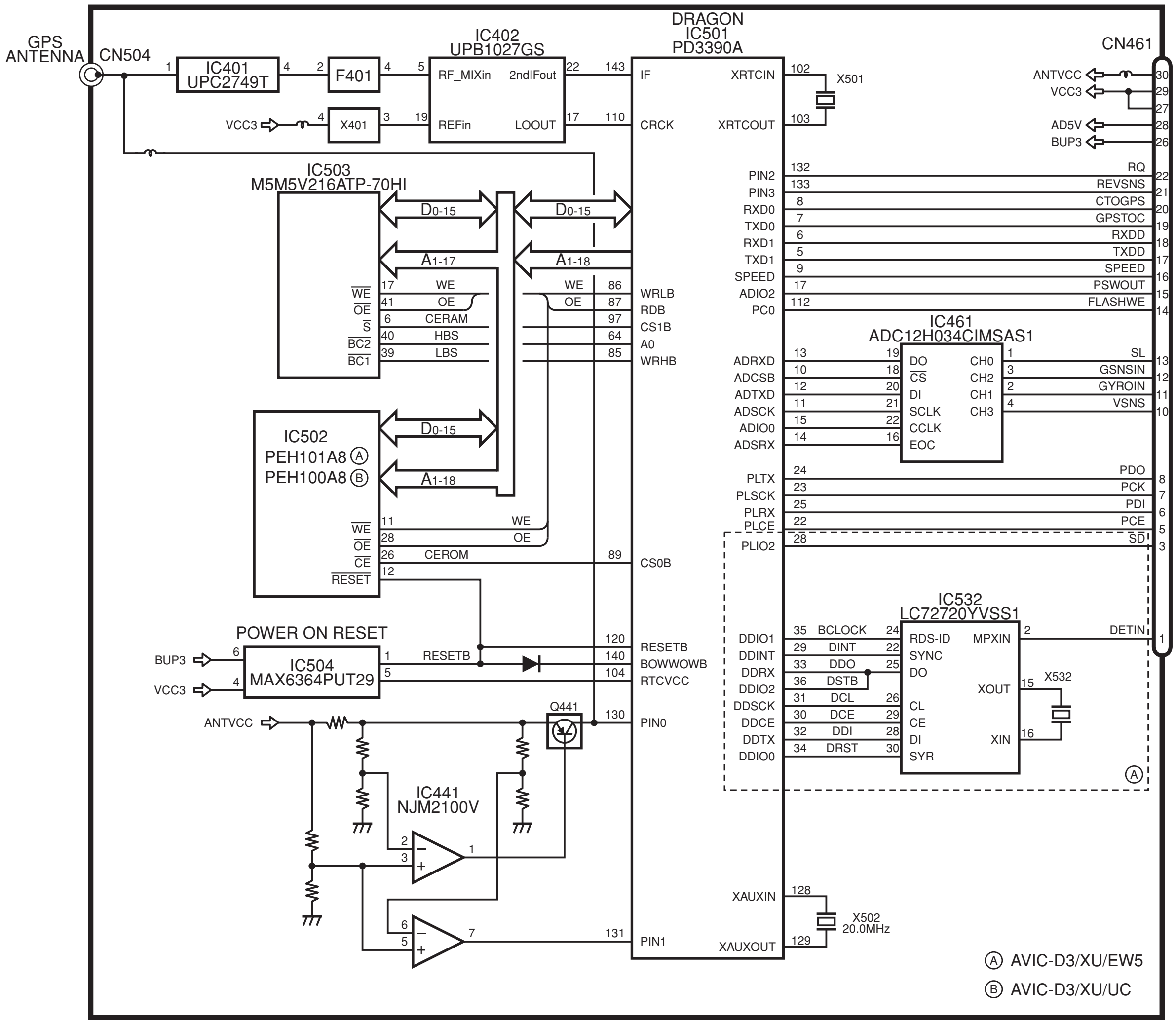
G MONITOR UNIT



Ⓐ AVIC-D3/XU/EW5

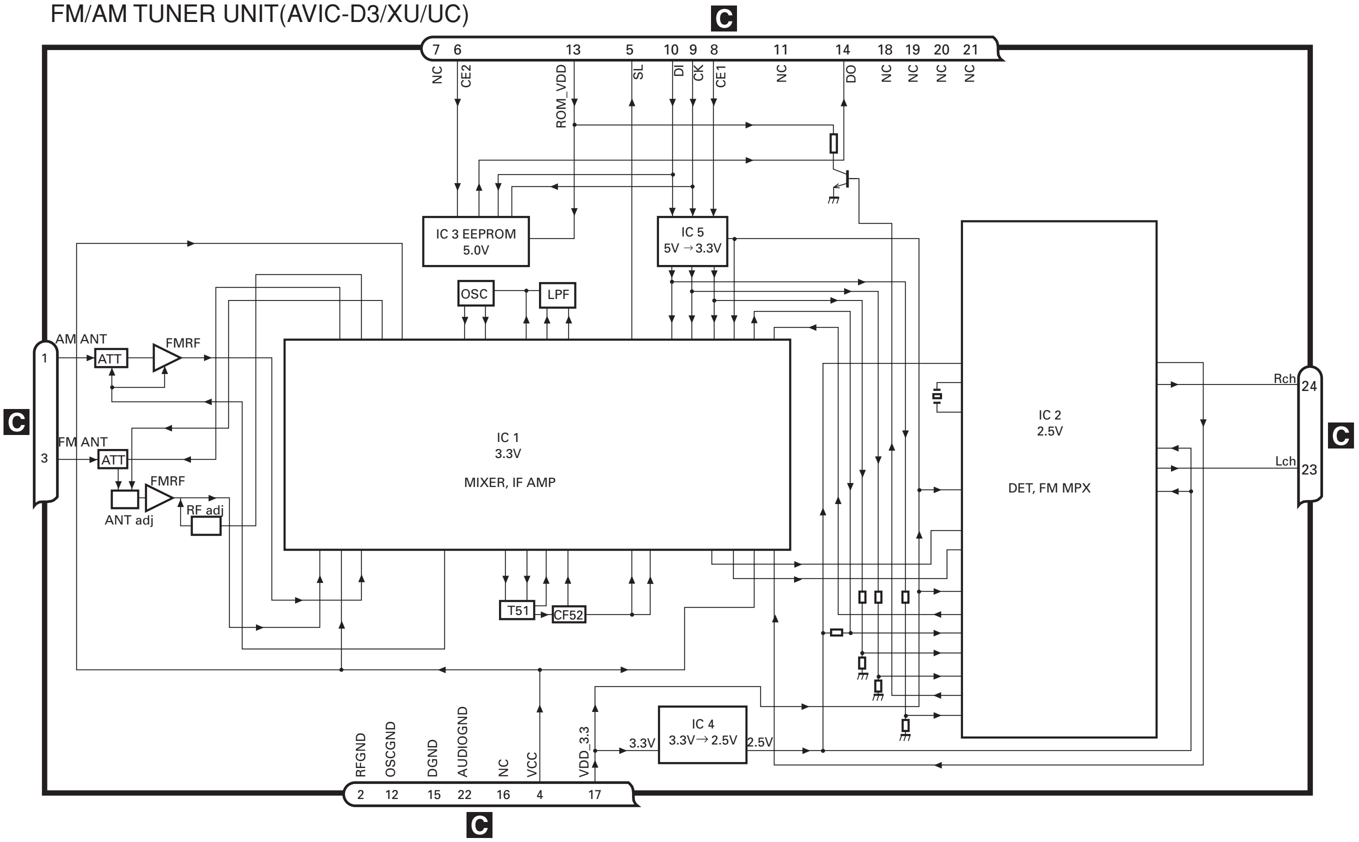

IC5011
RB5P0090M
ROUT
GOUT
BOUT
COM_DC
COMOUT
RIN2
GIN2
BIN2
SW2
SYNC_IN2
RIN1
GIN1
BIN1
DI
CLK
CS
SYNC_SW
SW1
PSAVE
NTSC/PAL_OUT
BLK_IN
HSY_IN
COM_FRP
FRP
SYNC_OUT
SYNC_IN1
VCO_OUT(NTSC)
VCO_IN(NTSC)
VCO_OUT(PAL)
VCO_IN(PAL)
X5011
3.58MHz
X5010
4.43MHz
A
CN5007
LCDR
LCDG
LCDB
VCOM
COMS
RED
GREEN
BLUE
COM
VGL
CS
VSHA2
VSHA1
VCC
VGH
V53
V15
LCD MODULE
Q5650
OSDRGB
OSDOVR
IOUT(C3)
ROUT(C1)
GOUT(C2)
BOUT(C0)
VOB1
HSYNC
DOCKI
C5650
D6567A
IC5012
TC7SH04FUS1
NVSYNC
ANR
ANG
ANB
LCDDT
LCDCK
LCDCS
RGBSEL
PSAVE
COLSYS
IC5100
LZ9FE30
MDS
MDW
MDN
VSY
NTPC
VSC
HSY
FRPT
OSCO
OSCI
PDP
SPIO
SYNI
SPS
CLS
VR
MOD2
MOD1
CTR
CLD
HR
SPOI
IC5010
TC7SH32FUS1
BLKDRV
MASK
IC5101
NJM2107F
Q5100
IC5060
TC74VHC221AFTS1
SYNCCT
SPIO
SPS
CLS
VRV
MODE2
MODE1
CTR
CLD
HRV
SPOI
CN5006
FL1
FL2
900
V14
D/D CONVERTER
IC5181
BD6171KV
PVCC1
PVCC2
PVCC
VCC
EN1
RT
OUT2
VS2
PVCC3
PVCC4
PVCC5
OUT1
VS1
OUT3
OUT4
OUT5
8V REG.
Q5200
V8
5V REG.
Q5210
V5
V53
V15
VM10
MVIPW
FREQSW
Q5180
H KEY PCB
KEY MATRIX
CN5003
CN5503
KDT1
KDT0
ROT1
ROT0
S5502 LEFT
S5503 MAP
S5501 RIGHT
S5507 SOURCE(enter)
S5504 MENU
HDRST
RESET S5506
EJECT S5505
DISCEJ
IC5700
M62343FP
LEDDT
LEDCK
LEDCS
DI
CLK
LD
A01
A02
A03
RED
GREEN
BLUE
Q5703
Q5705
Q5700
Q5702
LEDR
LEDG
LEDB
D5501
ILMB

B GPS UNIT

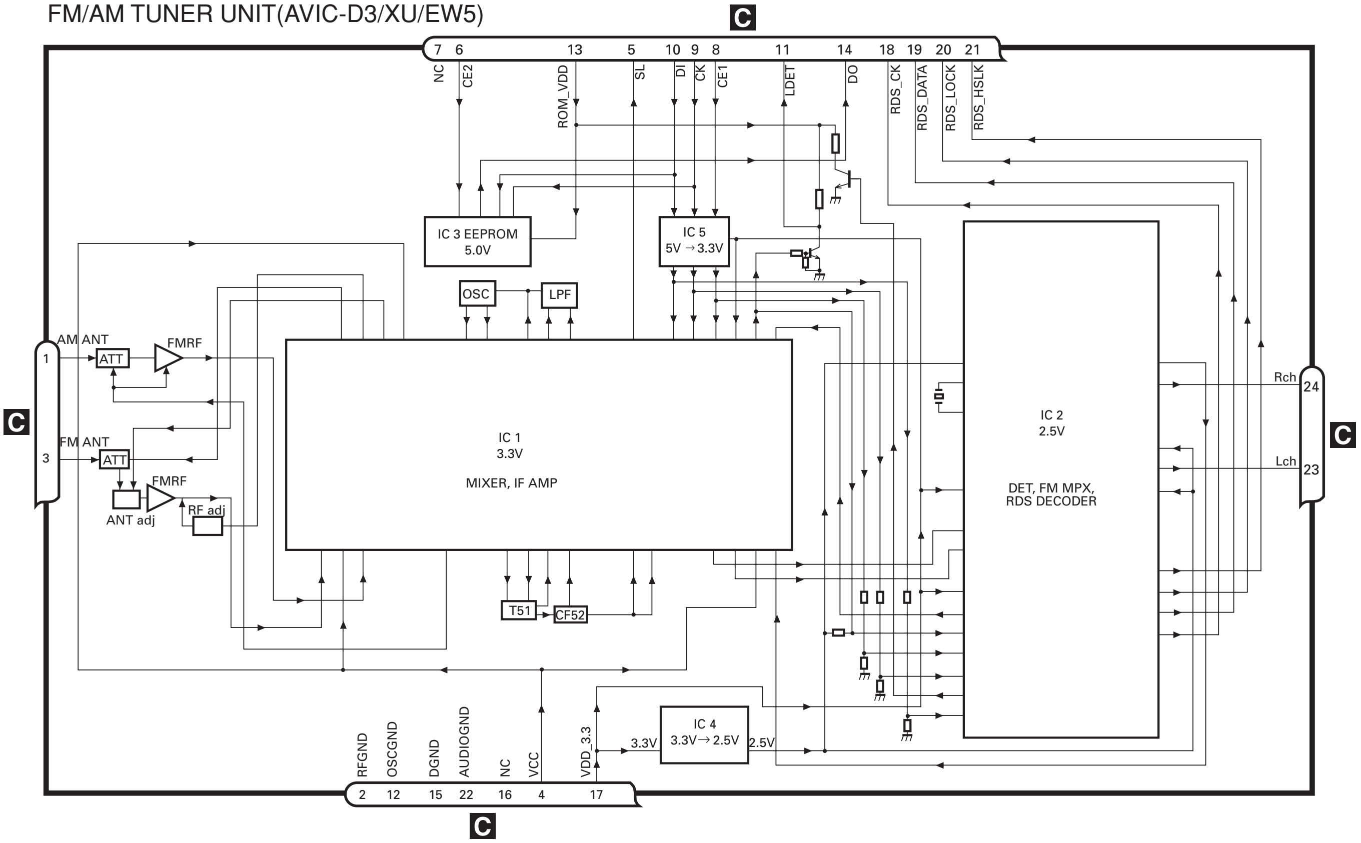

GPS ANTENNA
CN504
IC401 UPC2749T
F401
IC402 UPB1027GS
RF_MIXin
2ndIFout
REFin
LOOUT
VCC3
X401
DRAGON IC501 PD3390A
IF
CRCK
XRTCIN
XRTCOUT
X501
CN461
ANTVCC
VCC3
AD5V
BUP3
IC503 M5M5V216ATP-70HI
D0-15
A1-17
A1-18
WE
OE
S
BC2
BC1
CERAM
HBS
LBS
WRLB
RDB
CS1B
A0
WRHB
PIN2
PIN3
RXD0
TXD0
RXD1
TXD1
SPEED
ADIO2
PC0
RQ
REVSNS
CTOGPS
GPSTOC
RXDD
TXDD
SPEED
PSWOUT
FLASHWE
IC461 ADC12H034CIMSAS1
ADRXD
ADCSB
ADTXD
ADSCK
ADIO0
ADSRX
DO
CS
DI
SCLK
CCLK
EOC
CH0
CH2
CH1
CH3
SL
GSNSIN
GYROIN
VSNS
CN2060
A
IC502 PEH101A8 Ⓐ PEH100A8 Ⓑ
CE
RESET
CEROM
CS0B
PLTX
PLSCK
PLRX
PLCE
PLIO2
PDO
PCK
PDI
PCE
SD
IC532 LC72720YVSS1
DDIO1
DDINT
DDRX
DDIO2
DDSCK
DDCE
DDTX
DDIO0
BCLOCK
DINT
DDO
DSTB
DCL
DCE
DDI
DRST
RDS-ID
SYNC
DO
CL
CE
DI
SYR
MPXIN
XOUT
XIN
X532
DETIN
POWER ON RESET
BUP3
VCC3
IC504 MAX6364PUT29
RESETB
RESETB
BOWWOWB
RTCVCC
ANTVCC
Q441
PIN0
IC441 NJM2100V
PIN1
XAUXIN
XAUXOUT
X502 20.0MHz
Ⓐ AVIC-D3/XU/EW5
Ⓑ AVIC-D3/XU/UC

FM/AM
C
AM ANT
FM ANT
FM/AM
C
AM ANT
FM ANT

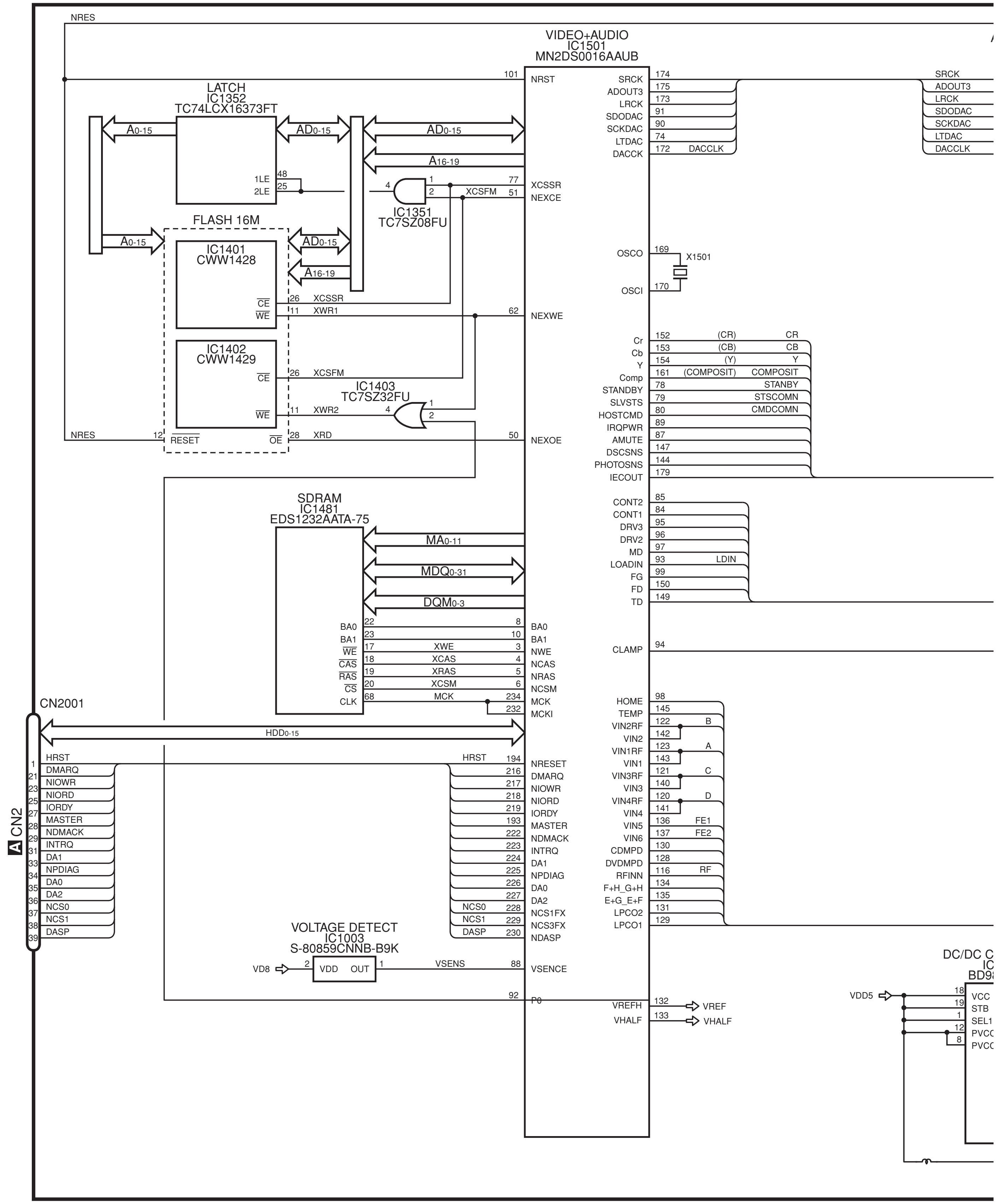
FM/AM TUNER UNIT(AVIC-D3/XU/UC)

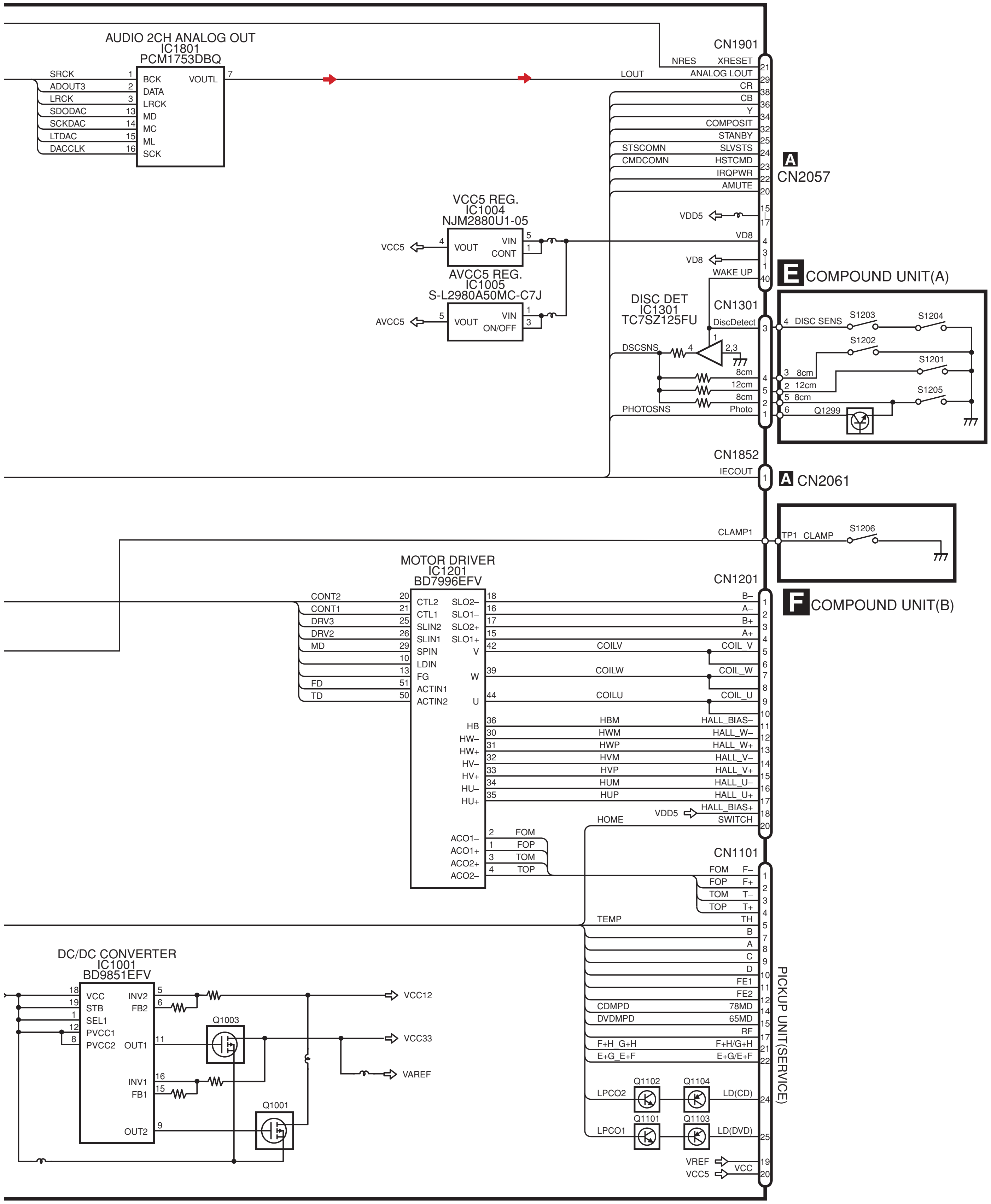


FM/AM TUNER UNIT(AVIC-D3/XU/EW5)

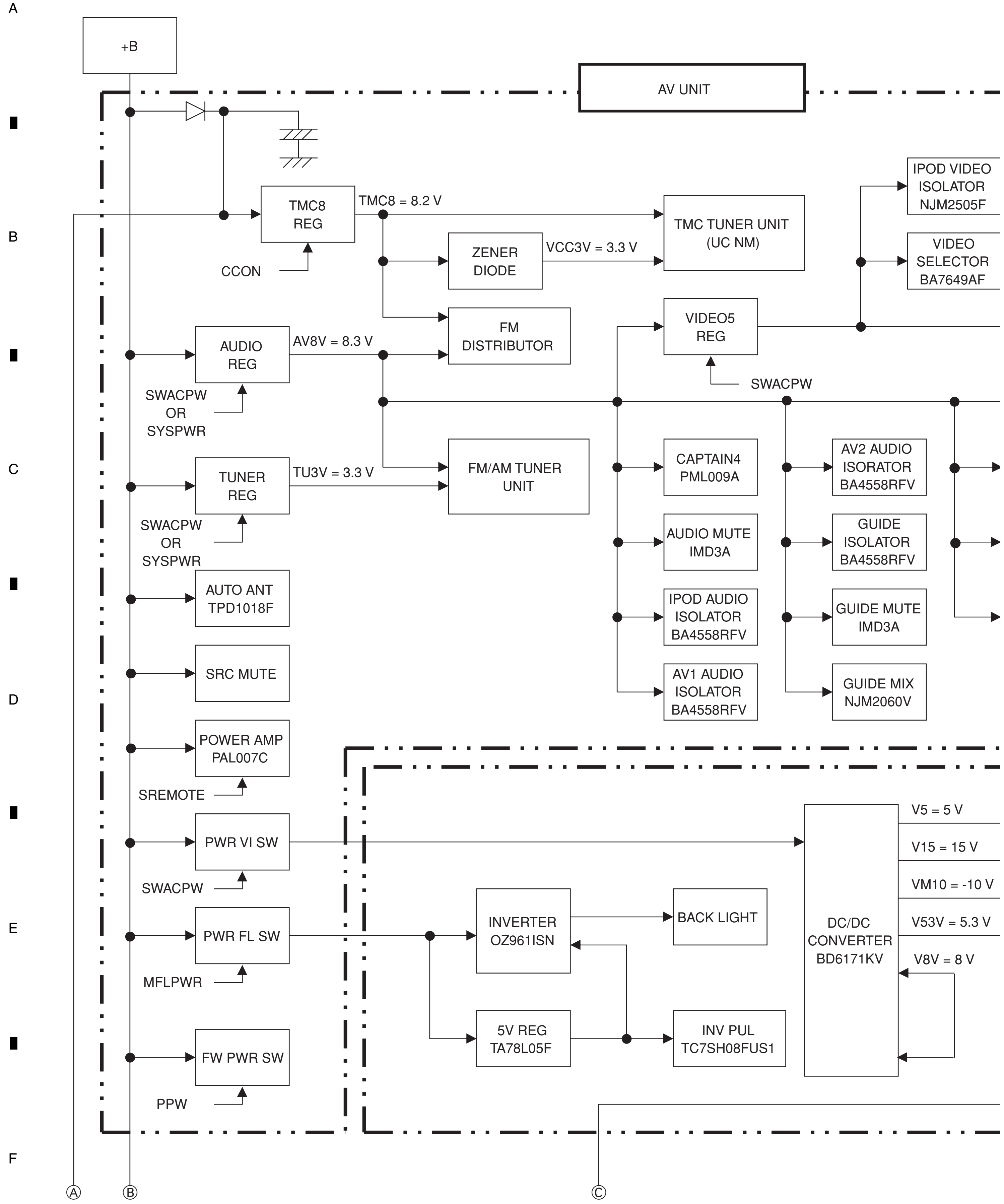


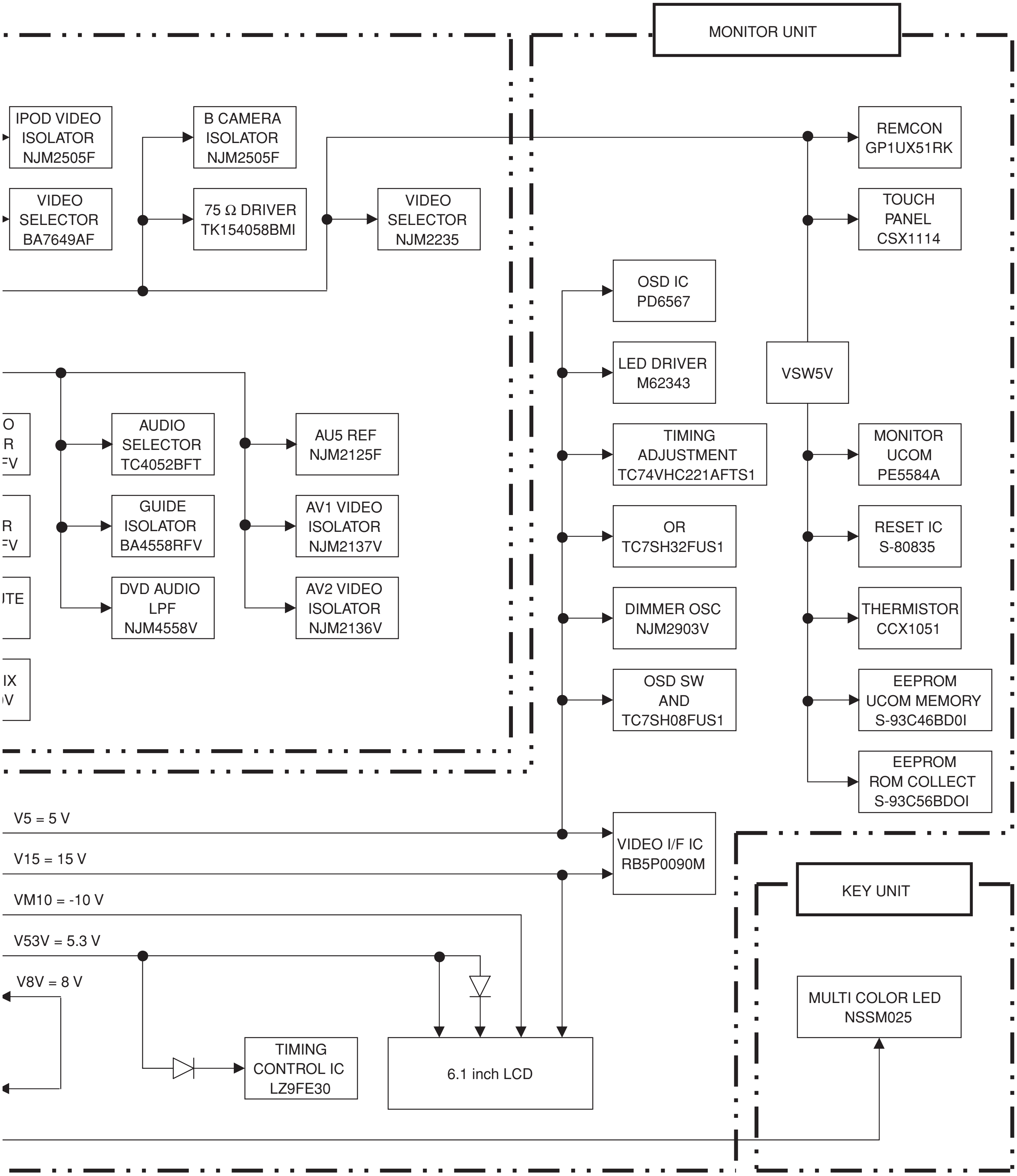
D DVD CORE UNIT

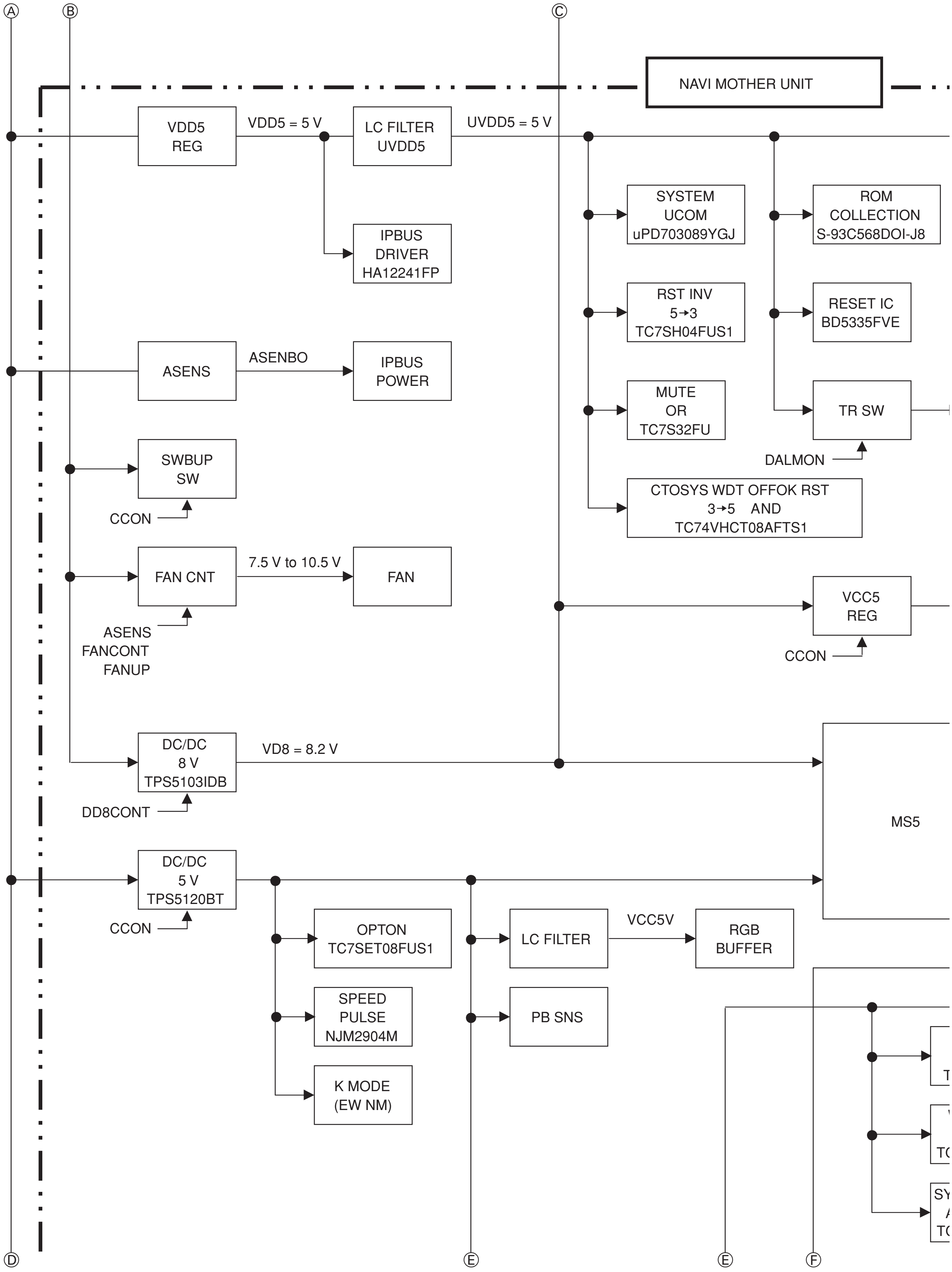


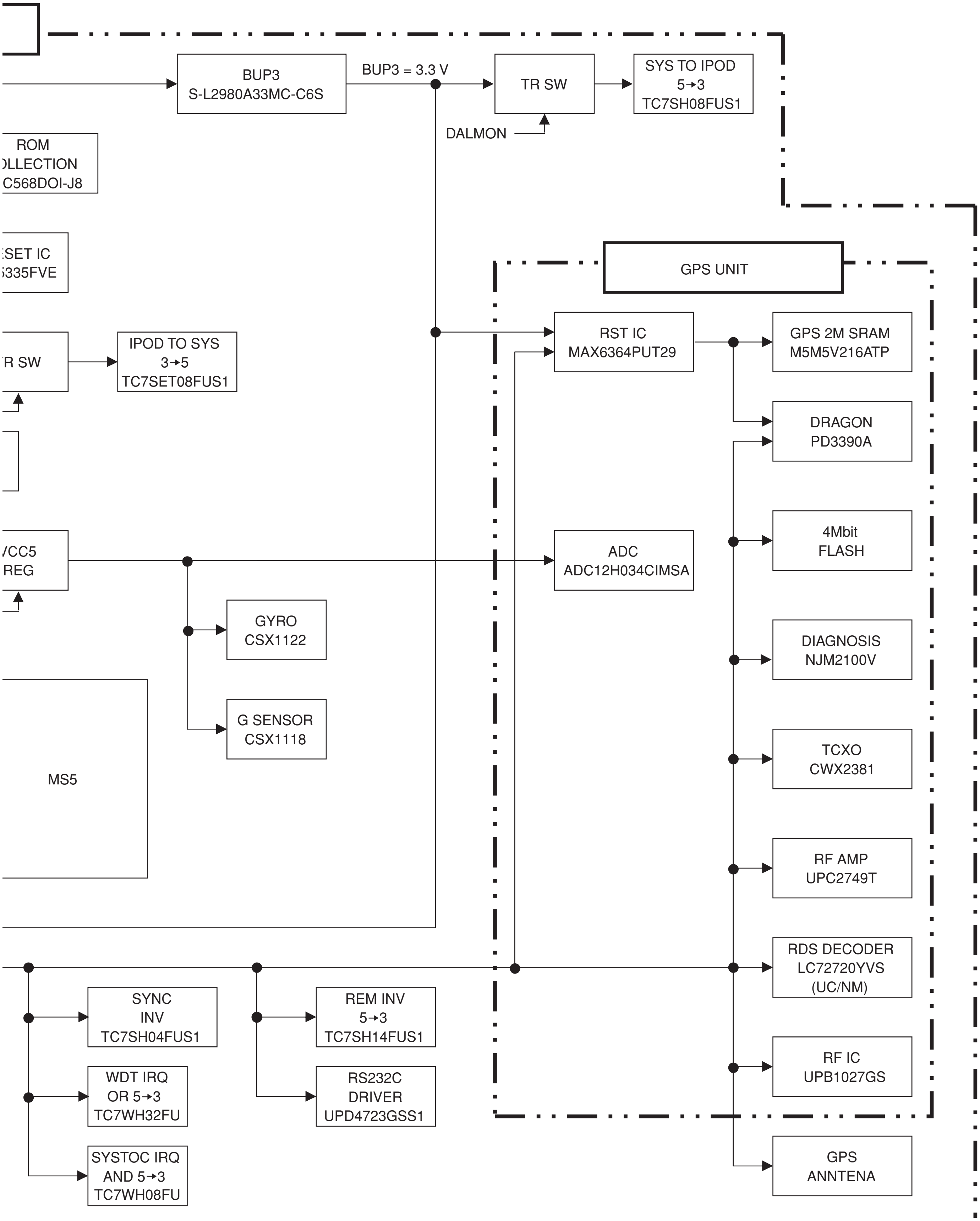

AUDIO 2CH ANALOG OUT
IC1801
PCM1753DBQ
SRCK 1 BCK
ADOUT3 2 DATA
LRCK 3 LRCK
SDODAC 13 MD
SCKDAC 14 MC
LTDAC 15 ML
DACCLK 16 SCK
VOUTL 7
LOUT
CN1901
NRES XRESET 21
ANALOG LOUT 29
CR 38
CB 36
Y 34
COMPOSIT 32
STANBY 25
STSCOMN SLVSTS 24
CMDCOMN HSTCMD 23
IRQPWR 22
AMUTE 20
A CN2057
VDD5 15 17
VD8 4 3
VD8 1
WAKE UP 40
E COMPOUND UNIT(A)
VCC5 REG.
IC1004
NJM2880U1-05
VCC5 4 VOUT VIN 5 CONT 1
AVCC5 REG.
IC1005
S-L2980A50MC-C7J
AVCC5 5 VOUT VIN 1 ON/OFF 3
DISC DET
IC1301
TC7SZ125FU
CN1301
DiscDetect 3
DSCSNS 4 1 2,3
8cm 4
12cm 5
8cm 2
PHOTOSNS Photo 1
4 DISC SENS S1203 S1204
S1202
S1201
3 8cm
2 12cm
5 8cm
S1205
6 Q1299
CN1852
IECOUT 1
A CN2061
CLAMP1
TP1 CLAMP S1206
MOTOR DRIVER
IC1201
BD7996EFV
CN1201
CONT2 20 CTL2 SLO2– 18 B– 1
CONT1 21 CTL1 SLO1– 16 A– 2
DRV3 25 SLIN2 SLO2+ 17 B+ 3
DRV2 26 SLIN1 SLO1+ 15 A+ 4
MD 29 SPIN V 42 COILV COIL_V 5 6
10 LDIN
13 FG W 39 COILW COIL_W 7 8
FD 51 ACTIN1
TD 50 ACTIN2 U 44 COILU COIL_U 9 10
HB 36 HBM HALL_BIAS– 11
HW– 30 HWM HALL_W– 12
HW+ 31 HWP HALL_W+ 13
HV– 32 HVM HALL_V– 14
HV+ 33 HVP HALL_V+ 15
HU– 34 HUM HALL_U– 16
HU+ 35 HUP HALL_U+ 17
VDD5 HALL_BIAS+ 18
HOME SWITCH 20
F COMPOUND UNIT(B)
ACO1– 2 FOM
ACO1+ 1 FOP
ACO2+ 3 TOM
ACO2– 4 TOP
CN1101
FOM F– 1
FOP F+ 2
TOM T– 3
TOP T+ 4
TEMP TH 5
B 7
A 8
C 9
D 10
FE1 11
FE2 12
CDMPD 78MD 14
DVDMPD 65MD 15
RF 17
F+H_G+H F+H/G+H 21
E+G_E+F E+G/E+F 22
LPCO2 Q1102 Q1104 LD(CD) 24
LPCO1 Q1101 Q1103 LD(DVD) 25
VREF VCC 19
VCC5 20
PICKUP UNIT(SERVICE)
DC/DC CONVERTER
IC1001
BD9851EFV
18 VCC INV2 5
19 STB FB2 6
1 SEL1
12 PVCC1
8 PVCC2 OUT1 11
INV1 16
FB1 15
OUT2 9
Q1003
Q1001
VCC12
VCC33
VAREF

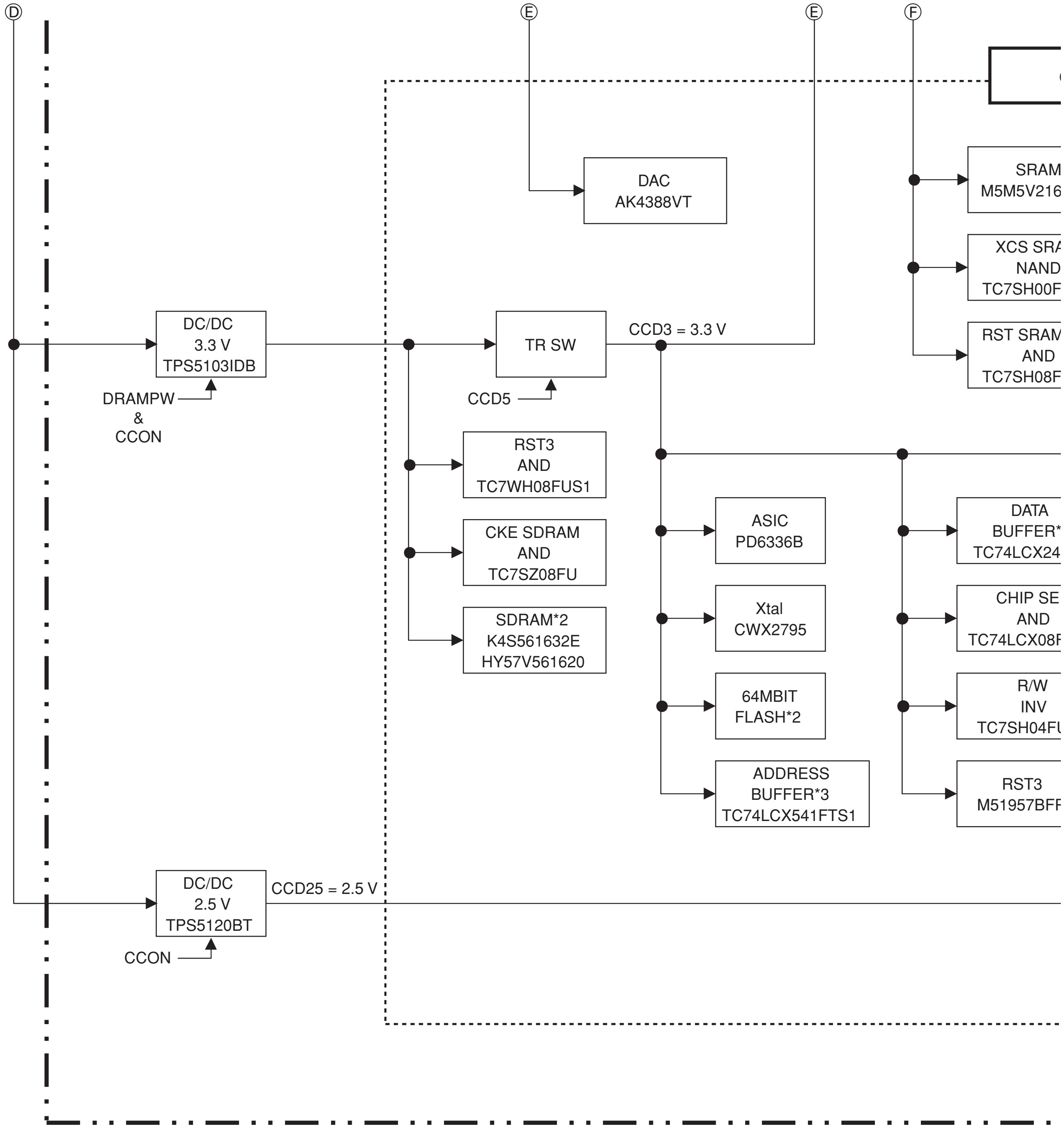
● Power supply system figure

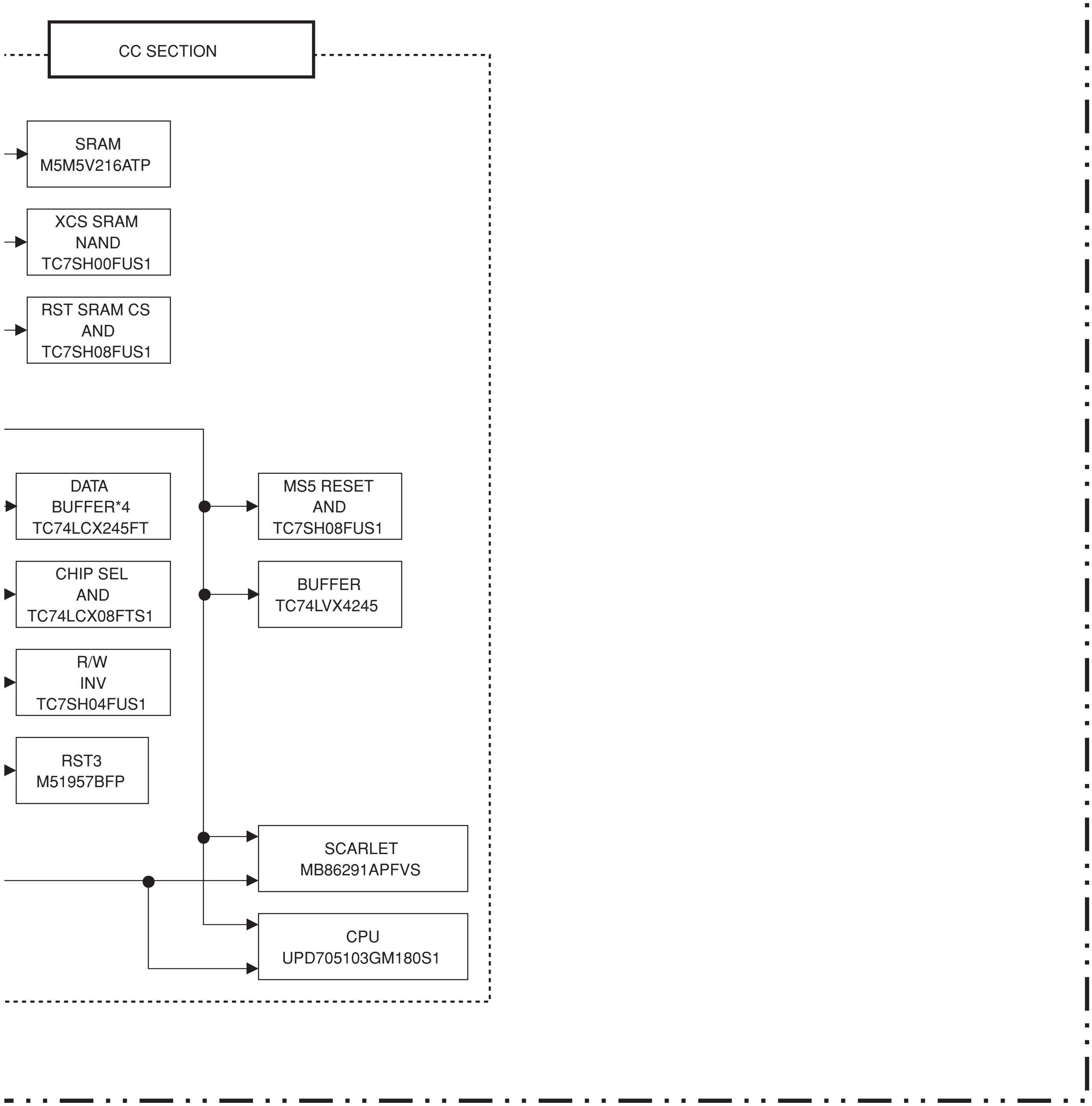



MONITOR UNIT
IPOD VIDEO ISOLATOR NJM2505F
B CAMERA ISOLATOR NJM2505F
REMCON GP1UX51RK
VIDEO SELECTOR BA7649AF
75 Ω DRIVER TK154058BMI
VIDEO SELECTOR NJM2235
TOUCH PANEL CSX1114
OSD IC PD6567
LED DRIVER M62343
VSW5V
O
R
FV
AUDIO SELECTOR TC4052BFT
AU5 REF NJM2125F
TIMING ADJUSTMENT TC74VHC221AFTS1
MONITOR UCOM PE5584A
R
FV
GUIDE ISOLATOR BA4558RFV
AV1 VIDEO ISOLATOR NJM2137V
OR TC7SH32FUS1
RESET IC S-80835
UTE
DVD AUDIO LPF NJM4558V
AV2 VIDEO ISOLATOR NJM2136V
DIMMER OSC NJM2903V
THERMISTOR CCX1051
IX
V
OSD SW AND TC7SH08FUS1
EEPROM UCOM MEMORY S-93C46BD0I
EEPROM ROM COLLECT S-93C56BDOI
V5 = 5 V
V15 = 15 V
VIDEO I/F IC RB5P0090M
KEY UNIT
VM10 = -10 V
V53V = 5.3 V
V8V = 8 V
MULTI COLOR LED NSSM025
TIMING CONTROL IC LZ9FE30
6.1 inch LCD


Ⓐ
Ⓑ
Ⓒ
NAVI MOTHER UNIT
VDD5 REG
VDD5 = 5 V
LC FILTER UVDD5
UVDD5 = 5 V
SYSTEM UCOM uPD703089YGJ
ROM COLLECTION S-93C568DOI-J8
IPBUS DRIVER HA12241FP
RST INV 5→3 TC7SH04FUS1
RESET IC BD5335FVE
ASENS
ASENBO
IPBUS POWER
MUTE OR TC7S32FU
TR SW
DALMON
SWBUP SW
CCON
CTOSYS WDT OFFOK RST 3→5 AND TC74VHCT08AFTS1
FAN CNT
7.5 V to 10.5 V
FAN
VCC5 REG
ASENS
FANCONT
FANUP
CCON
DC/DC 8 V TPS5103IDB
VD8 = 8.2 V
DD8CONT
MS5
DC/DC 5 V TPS5120BT
CCON
OPTON TC7SET08FUS1
LC FILTER
VCC5V
RGB BUFFER
SPEED PULSE NJM2904M
PB SNS
K MODE (EW NM)
Ⓓ
Ⓔ
Ⓔ
Ⓕ


BUP3
S-L2980A33MC-C6S
BUP3 = 3.3 V
TR SW
SYS TO IPOD
5→3
TC7SH08FUS1
DALMON
ROM
)LLECTION
C568DOI-J8
:SET IC
;335FVE
'R SW
IPOD TO SYS
3→5
TC7SET08FUS1
/CC5
REG
GYRO
CSX1122
G SENSOR
CSX1118
MS5
SYNC
INV
TC7SH04FUS1
WDT IRQ
OR 5→3
TC7WH32FU
SYSTOC IRQ
AND 5→3
TC7WH08FU
REM INV
5→3
TC7SH14FUS1
RS232C
DRIVER
UPD4723GSS1
GPS UNIT
RST IC
MAX6364PUT29
ADC
ADC12H034CIMSA
GPS 2M SRAM
M5M5V216ATP
DRAGON
PD3390A
4Mbit
FLASH
DIAGNOSIS
NJM2100V
TCXO
CWX2381
RF AMP
UPC2749T
RDS DECODER
LC72720YVS
(UC/NM)
RF IC
UPB1027GS
GPS
ANNTENA

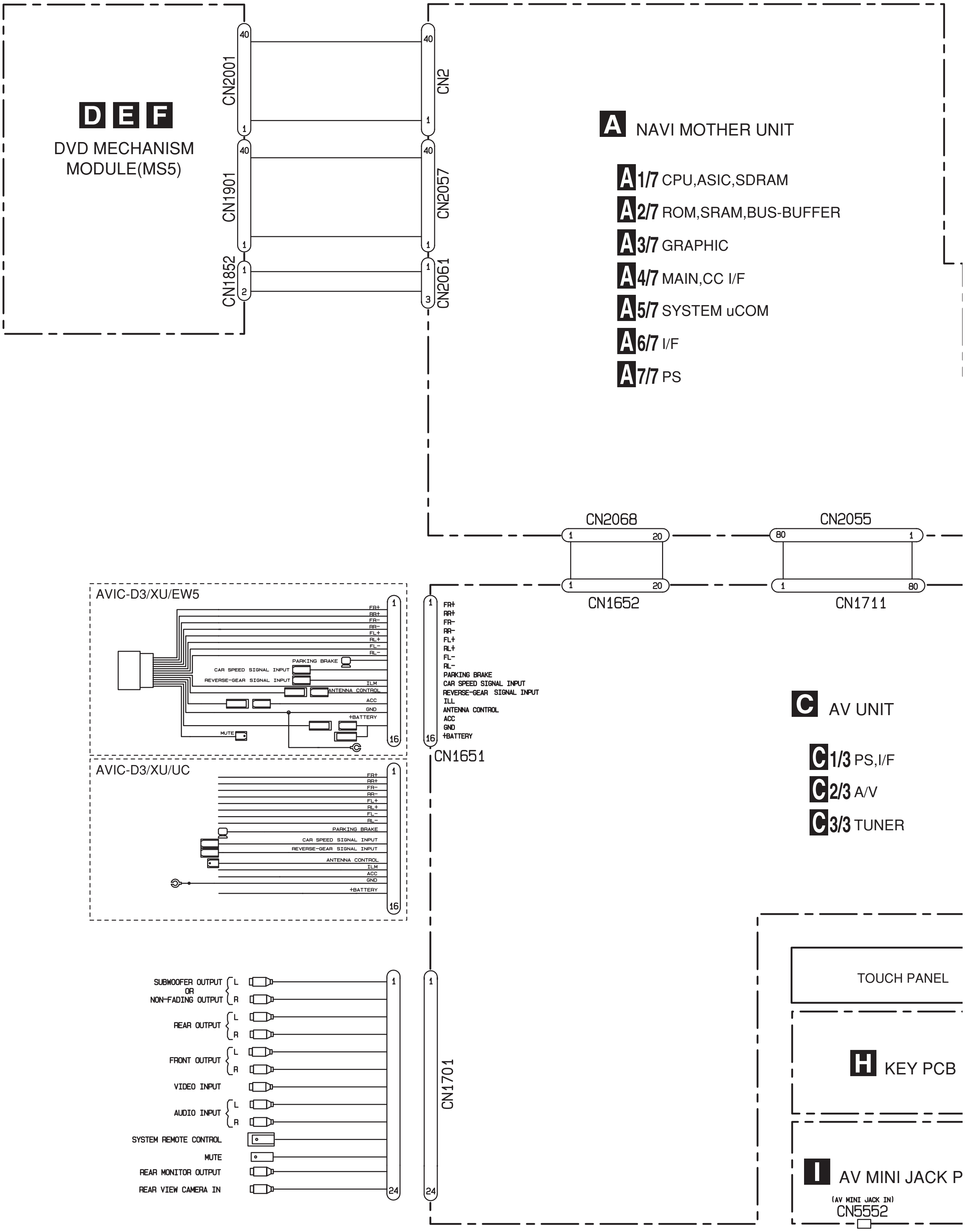

D
E
E
F
DAC
AK4388VT
SRAM
M5M5V216
XCS SRA
NAND
TC7SH00F
RST SRAM
AND
TC7SH08F
DC/DC
3.3 V
TPS5103IDB
DRAMPW
&
CCON
TR SW
CCD5
CCD3 = 3.3 V
RST3
AND
TC7WH08FUS1
CKE SDRAM
AND
TC7SZ08FU
SDRAM*2
K4S561632E
HY57V561620
ASIC
PD6336B
Xtal
CWX2795
64MBIT
FLASH*2
ADDRESS
BUFFER*3
TC74LCX541FTS1
DATA
BUFFER*
TC74LCX24
CHIP SE
AND
TC74LCX08F
R/W
INV
TC7SH04FU
RST3
M51957BFF
DC/DC
2.5 V
TPS5120BT
CCD25 = 2.5 V
CCON

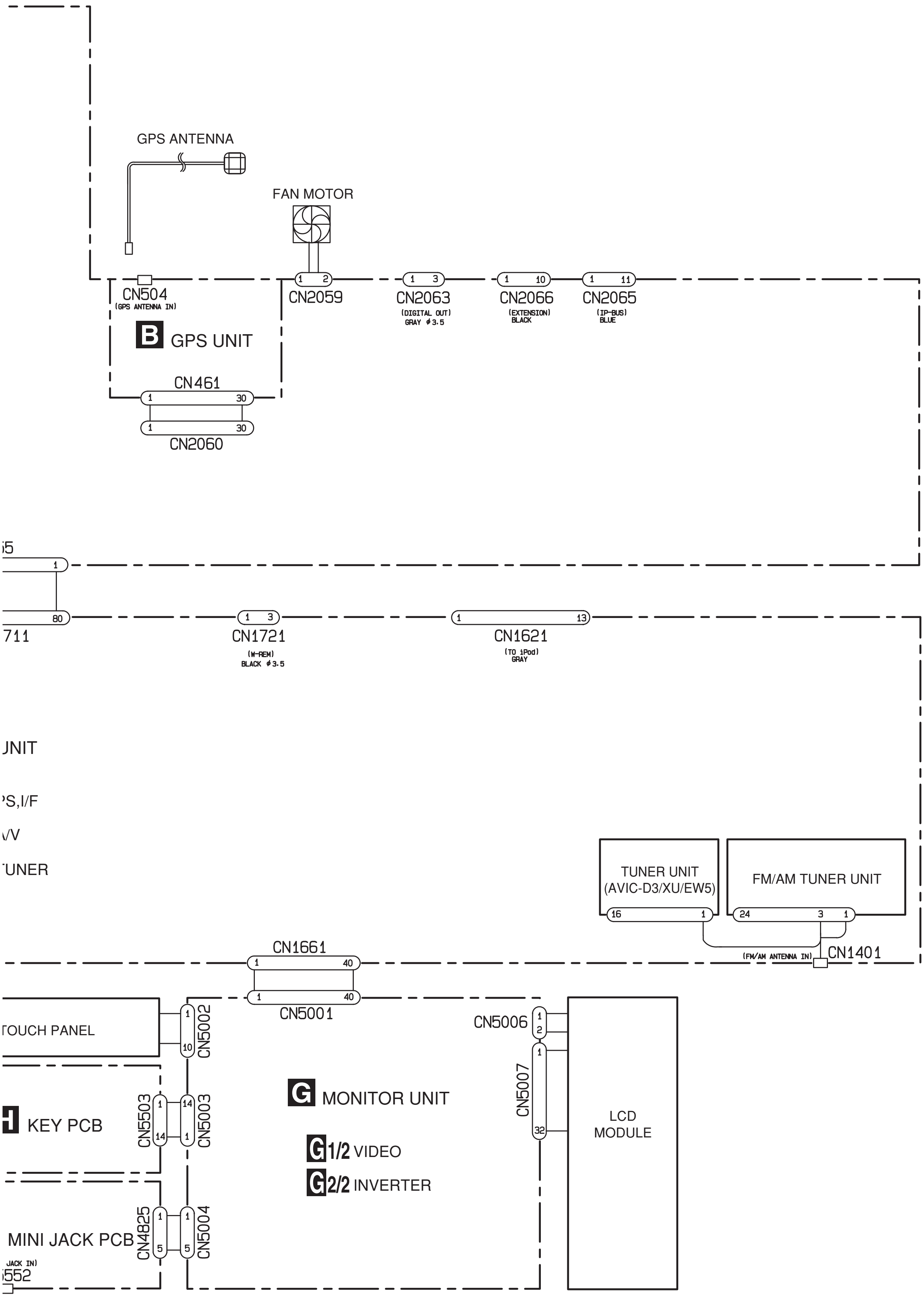


CC SECTION
SRAM
M5M5V216ATP
XCS SRAM
NAND
TC7SH00FUS1
RST SRAM CS
AND
TC7SH08FUS1
DATA
BUFFER*4
TC74LCX245FT
CHIP SEL
AND
TC74LCX08FTS1
R/W
INV
TC7SH04FUS1
RST3
M51957BFP
MS5 RESET
AND
TC7SH08FUS1
BUFFER
TC74LVX4245
SCARLET
MB86291APFVS
CPU
UPD705103GM180S1

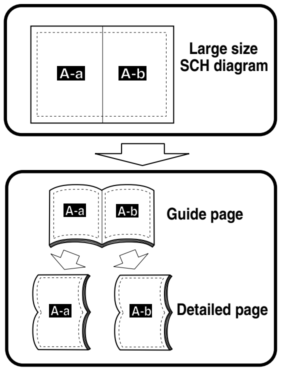
3.2 OVERALL CONNECTION DIAGRAM

Note: When ordering service parts, be sure to refer to " EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".




GPS ANTENNA
FAN MOTOR
1 2
CN504
(GPS ANTENNA IN)
CN2059
1 3
CN2063
(DIGITAL OUT)
GRAY ϕ3.5
1 10
CN2066
(EXTENSION)
BLACK
1 11
CN2065
(IP-BUS)
BLUE
B GPS UNIT
CN461
1 30
1 30
CN2060
5
1
80
711
1 3
CN1721
(W-REM)
BLACK ϕ3.5
1 13
CN1621
(TO iPod)
GRAY
UNIT
PS,I/F
A/V
TUNER
TUNER UNIT
(AVIC-D3/XU/EW5)
16 1
FM/AM TUNER UNIT
24 3 1
CN1661
1 40
(FM/AM ANTENNA IN)
CN1401
1 40
CN5001
TOUCH PANEL
1 10
CN5002
CN5006
1 2
1
CN5007
32
LCD
MODULE
H KEY PCB
CN5503
1 14
14 1
CN5003
G MONITOR UNIT
G1/2 VIDEO
G2/2 INVERTER
MINI JACK PCB
CN4825
1 5
1 5
CN5004
JACK IN)
552

3.3 NAVI MOTHER UNIT (CPU, ASIC, SDRAM)(GUIDE PAGE)

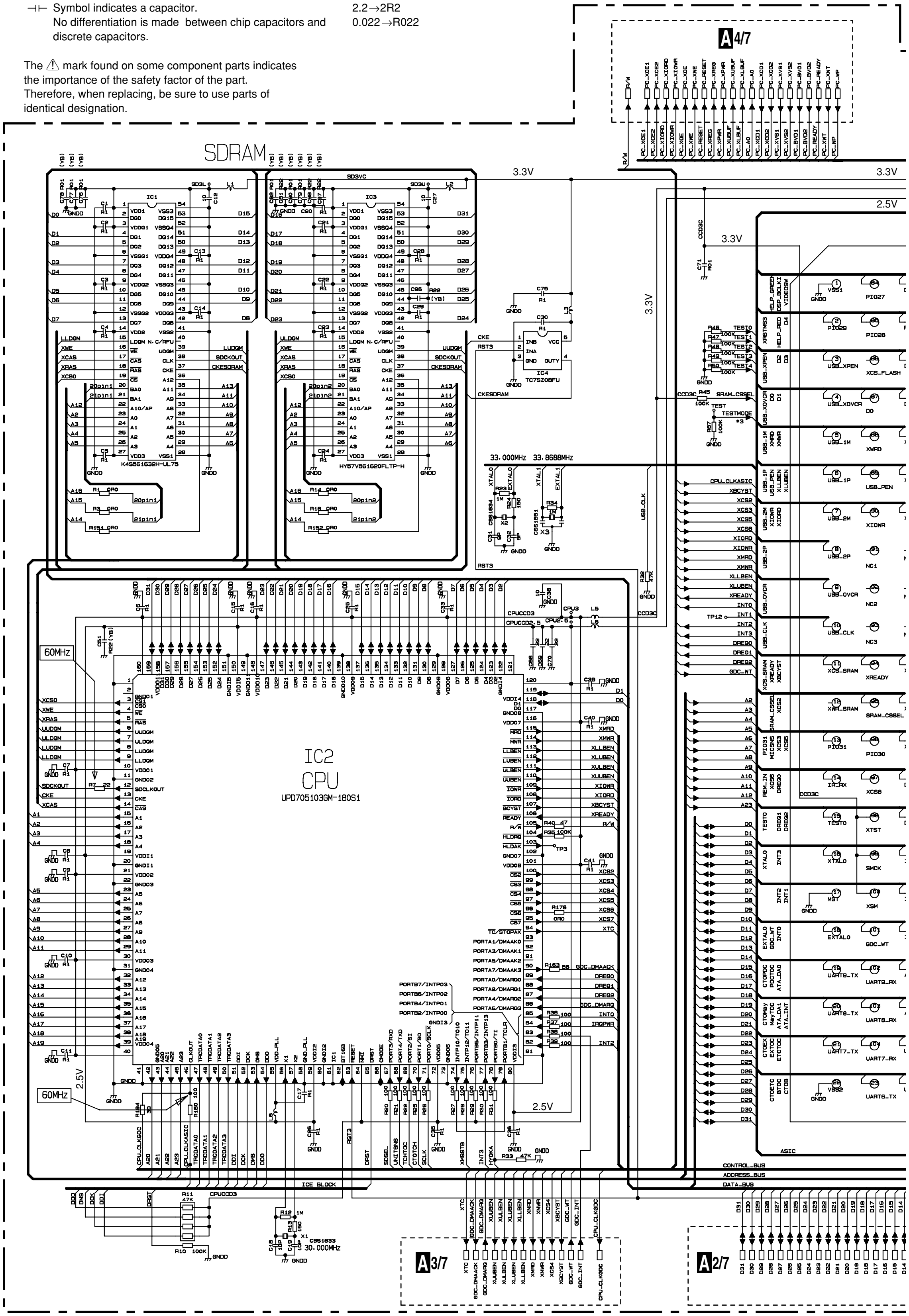


A-a 1/7

NOTE :
- ▭ Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- ⊣⊢ Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022

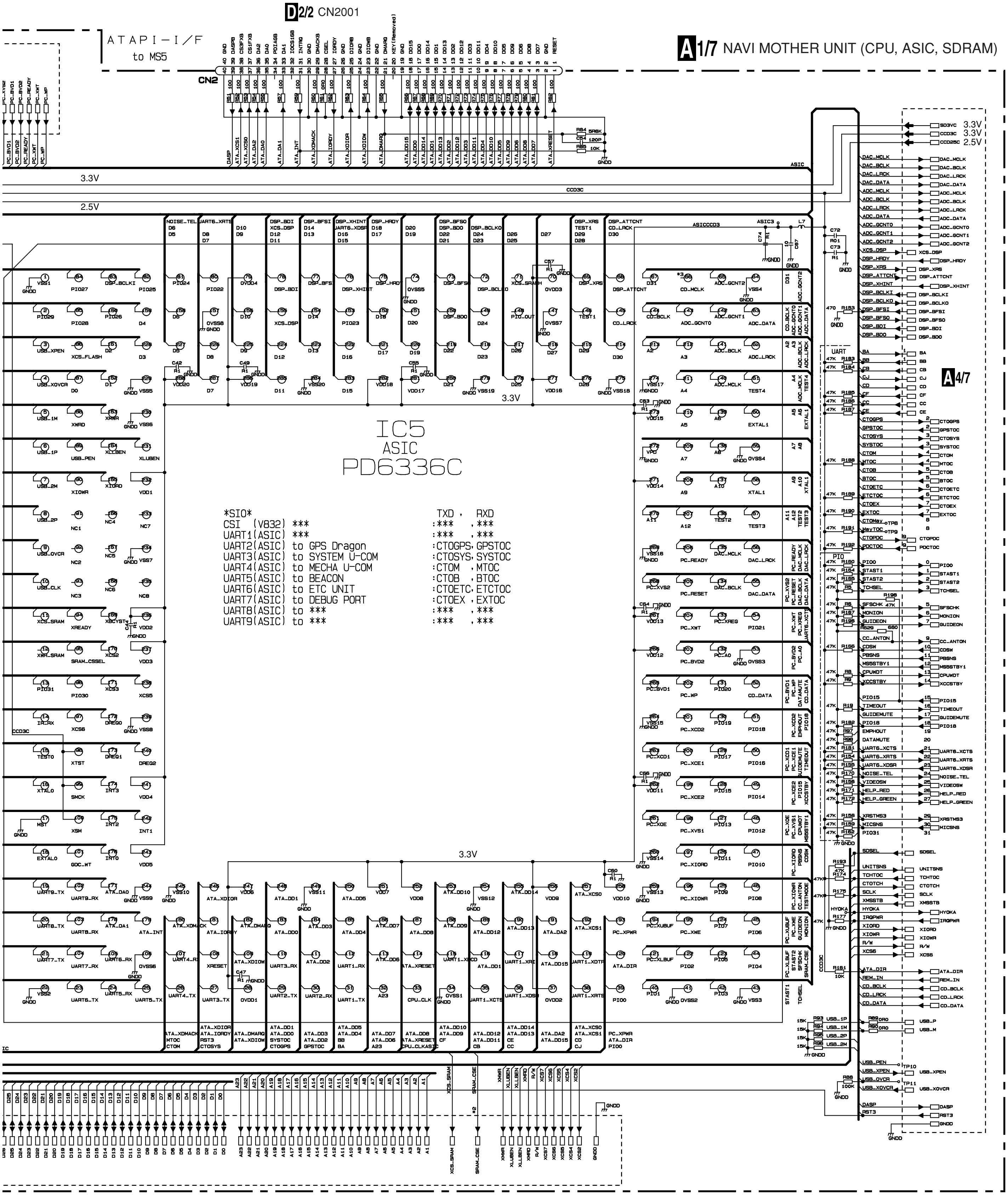
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.



A 1/7

A-b 1/7

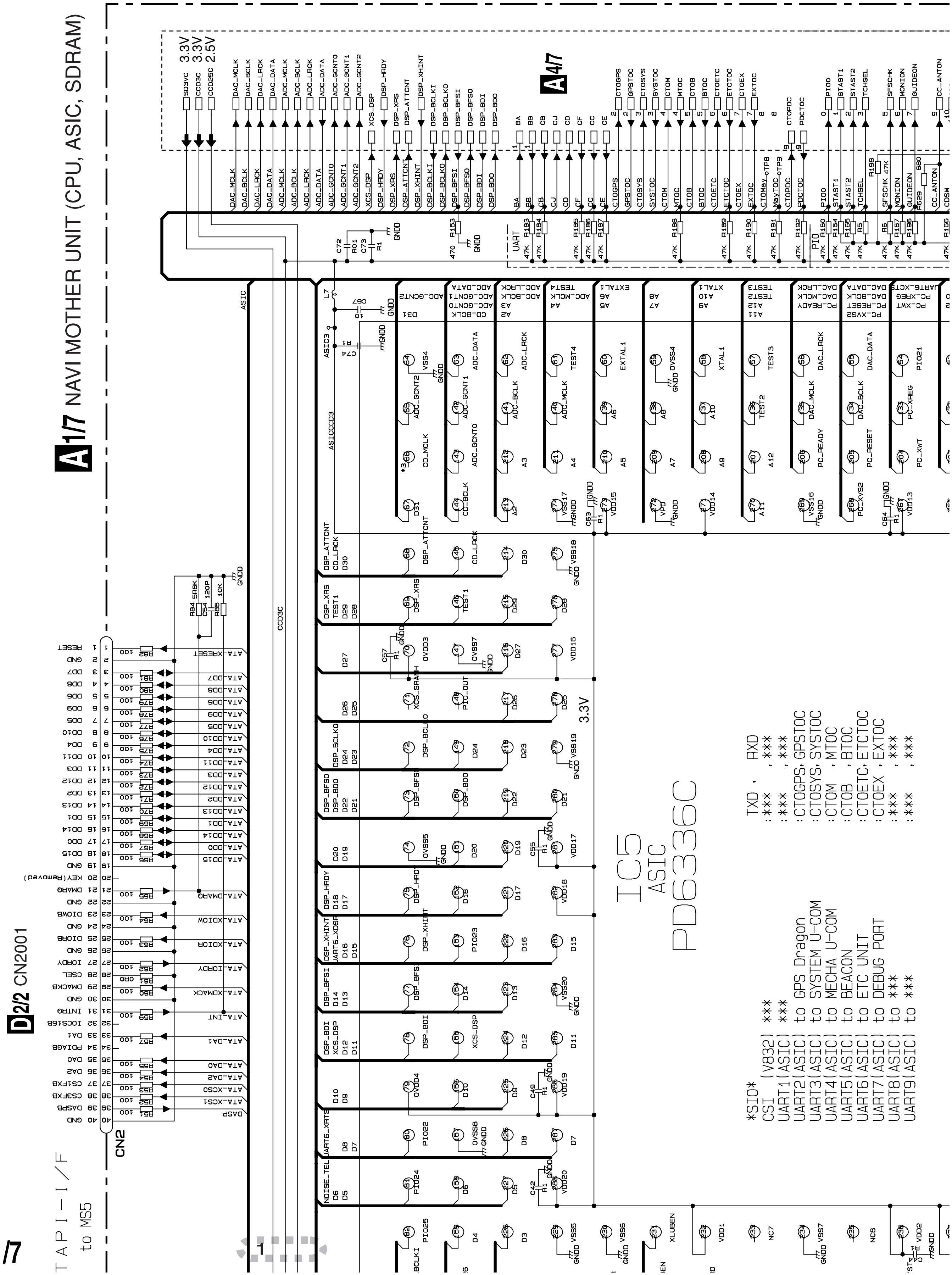
A 1/7 NAVI MOTHER UNIT (CPU, ASIC, SDRAM)



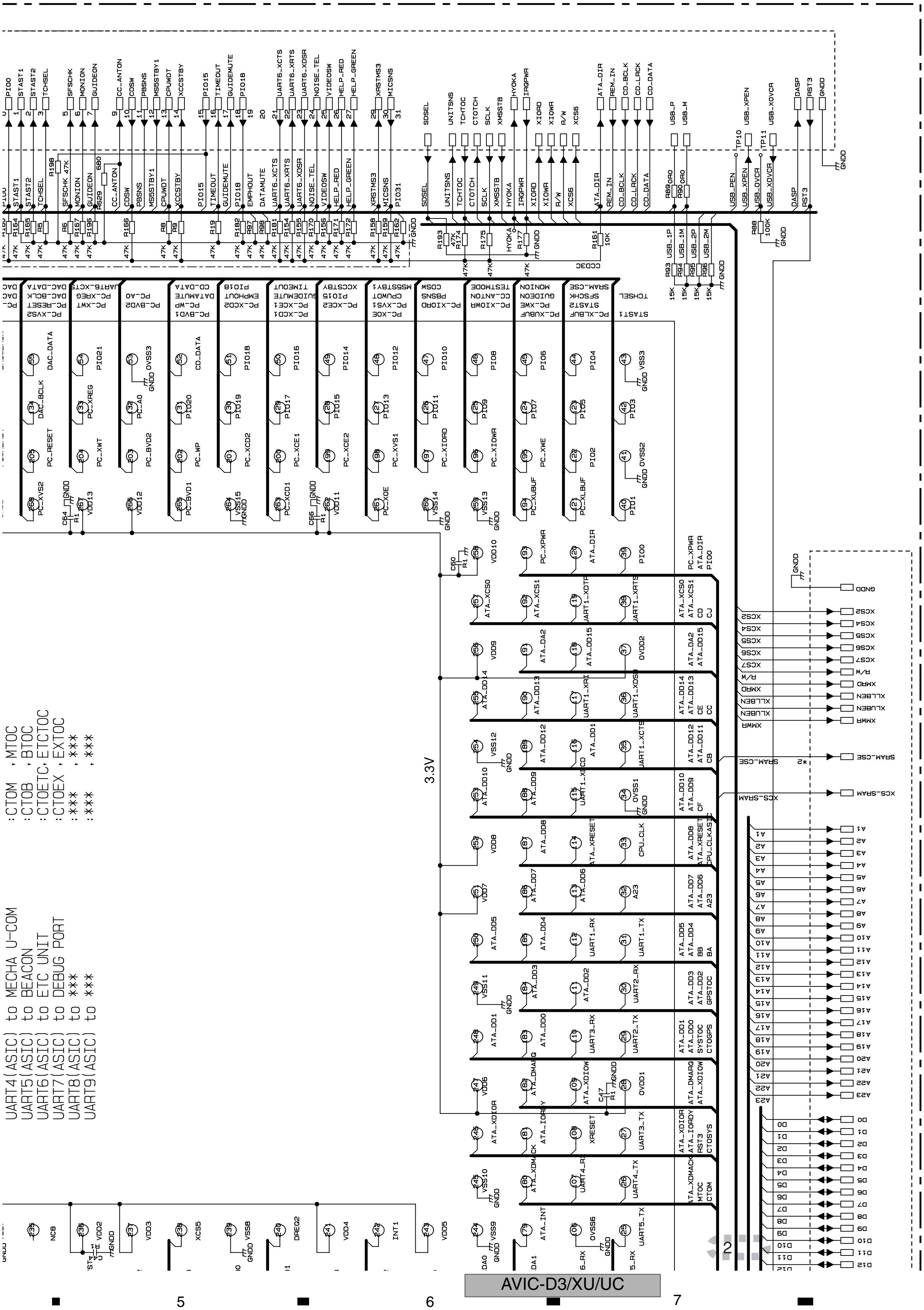
SIO	TXD	RXD
CSI (V832) ***	:***	,***
UART1(ASIC) ***	:***	,***
UART2(ASIC) to GPS Dragon	:CTOGPS	GPSTOC
UART3(ASIC) to SYSTEM U-COM	:CTOSYS	SYSTOC
UART4(ASIC) to MECHA U-COM	:CTOM	,MTOC
UART5(ASIC) to BEACON	:CTOB	,BTOC
UART6(ASIC) to ETC UNIT	:CTOETC	ETCTOC
UART7(ASIC) to DEBUG PORT	:CTOEX	,EXTOC
UART8(ASIC) to ***	:***	,***
UART9(ASIC) to ***	:***	,***

A 1/7

A 1/7 NAVI MOTHER UNIT (CPU, ASIC, SDRAM)



A-a A-b


UART4(ASIC) to MECHA U-COM :CTOM ,MTOC
UART5(ASIC) to BEACON :CTOB ,BTOC
UART6(ASIC) to ETC UNIT :CTOETC,ETCTOC
UART7(ASIC) to DEBUG PORT :CTOEX ,EXTOC
UART8(ASIC) to *** :*** ,***
UART9(ASIC) to *** :*** ,***
3.3V
GNDD
XCS2
XCS4
XCS5
XCS6
XCS7
R/W
XMRD
XLLBEN
XLUBEN
XMWR
SRAM-CSE
XCS-SRAM
A1
A23
D0
D12
USB_P
USB_M
USB_XPEN
USB_XOVCR
DASP
RST3
CCDSC

A-a A-b

A-b 1/7

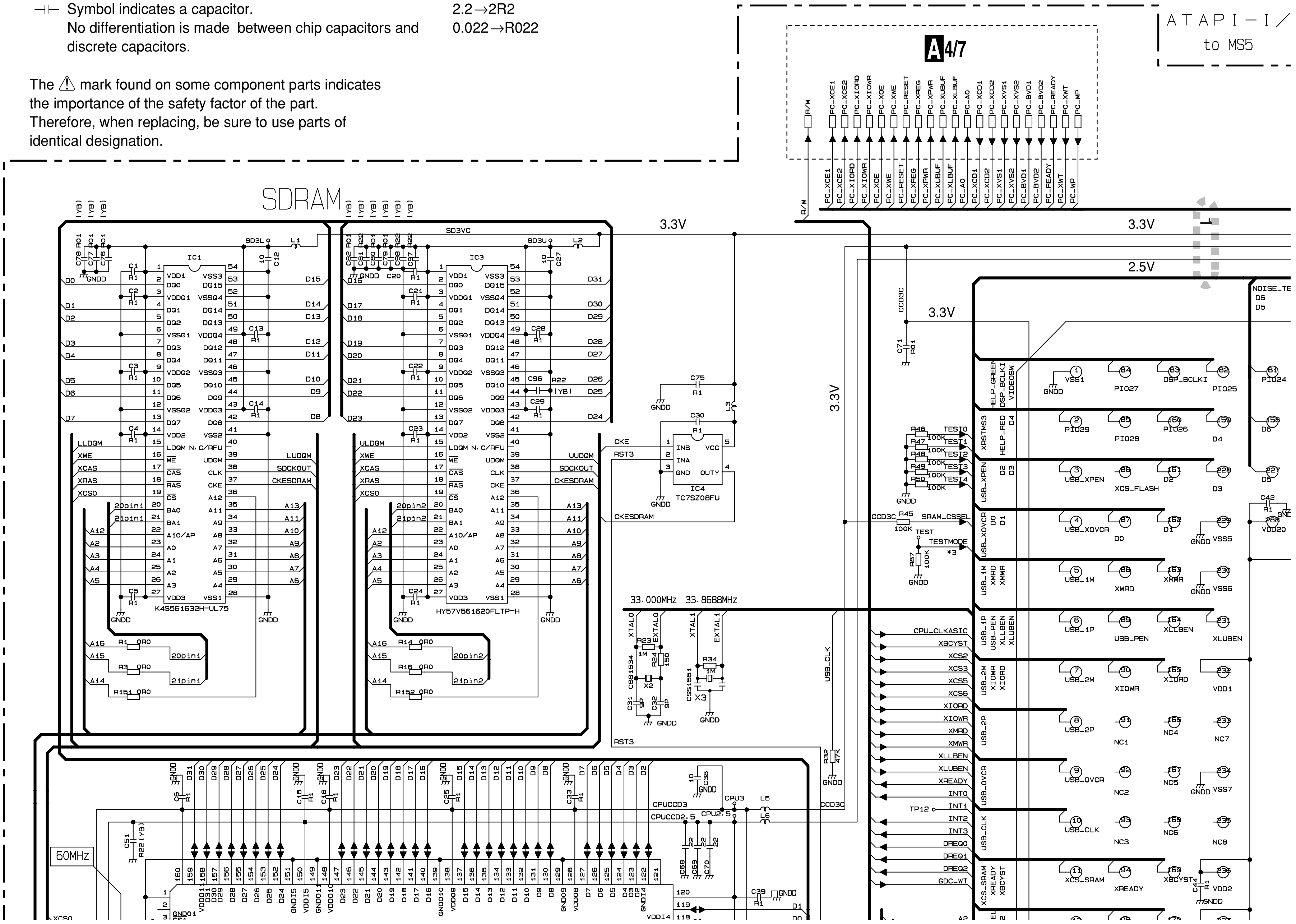
A-a A-b

NOTE :

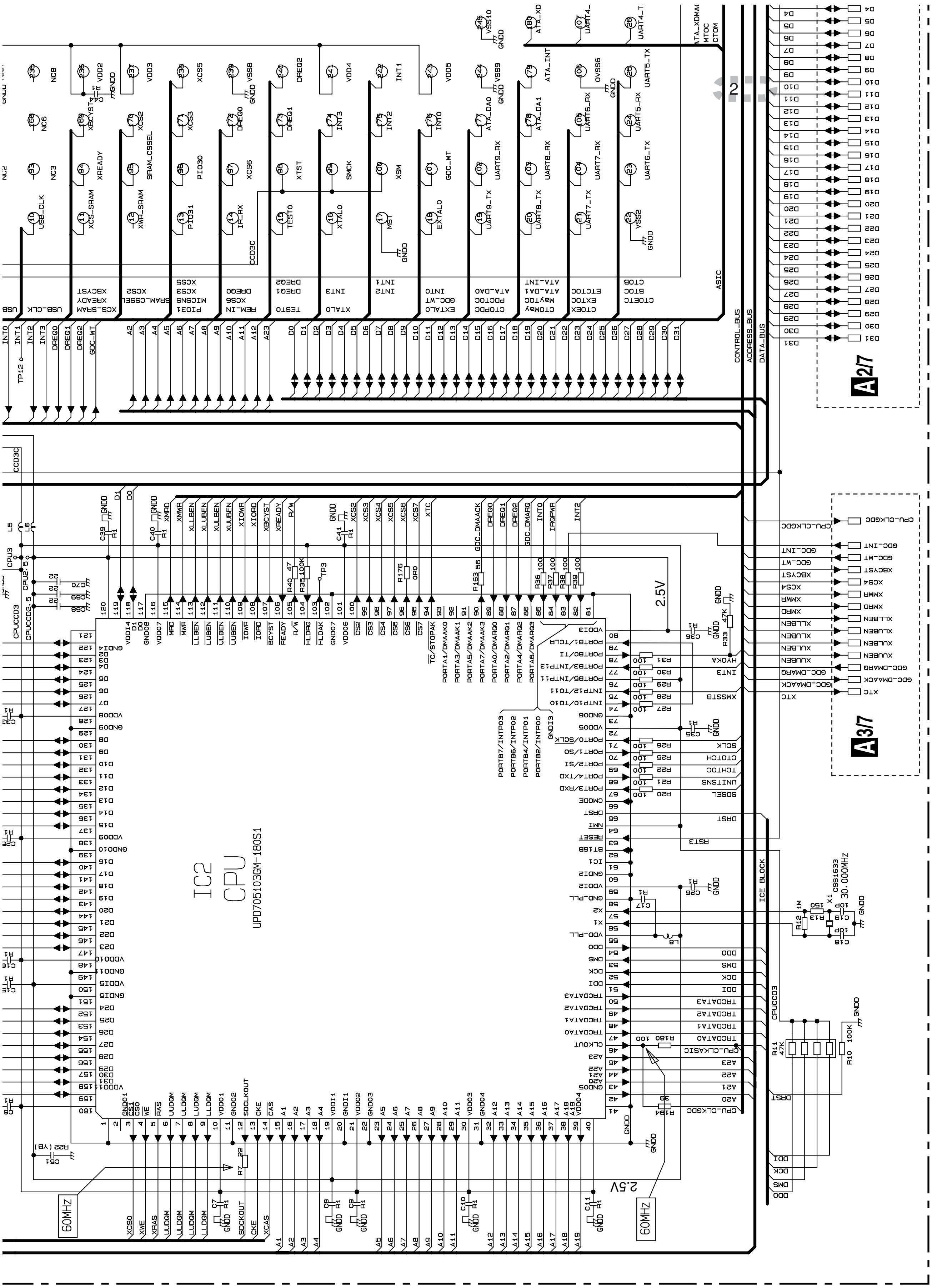
- ▭ Symbol indicates a resistor.
  No differentiation is made between chip resistors and discrete resistors.
- ⊣⊢ Symbol indicates a capacitor.
  No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022

The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.



A-b 1/7

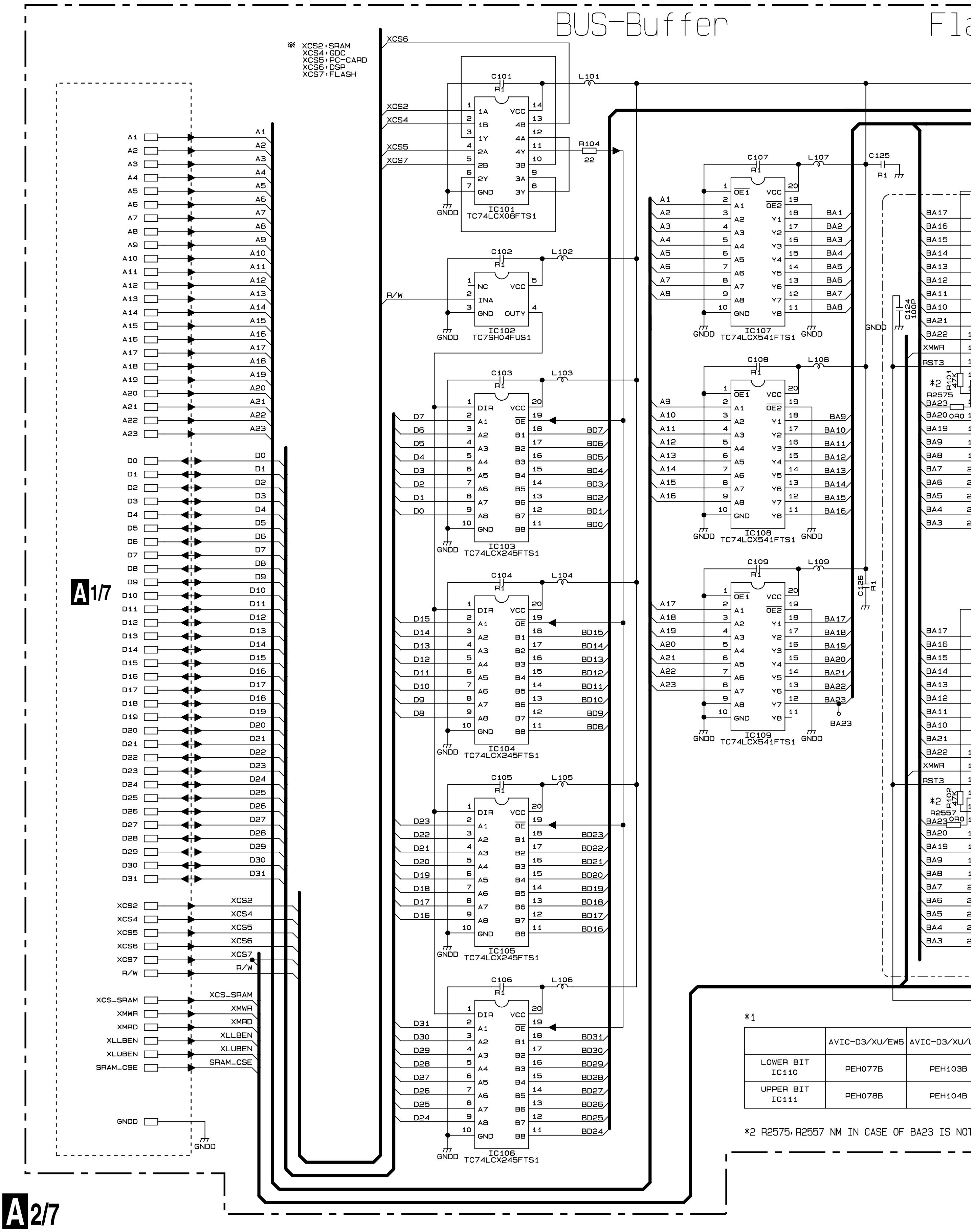


A
B
C
D
E
F

A-b
A-a

A-a 1/7

3.4 NAVI MOTHER UNIT (ROM, SRAM, BUS-BUFFER)

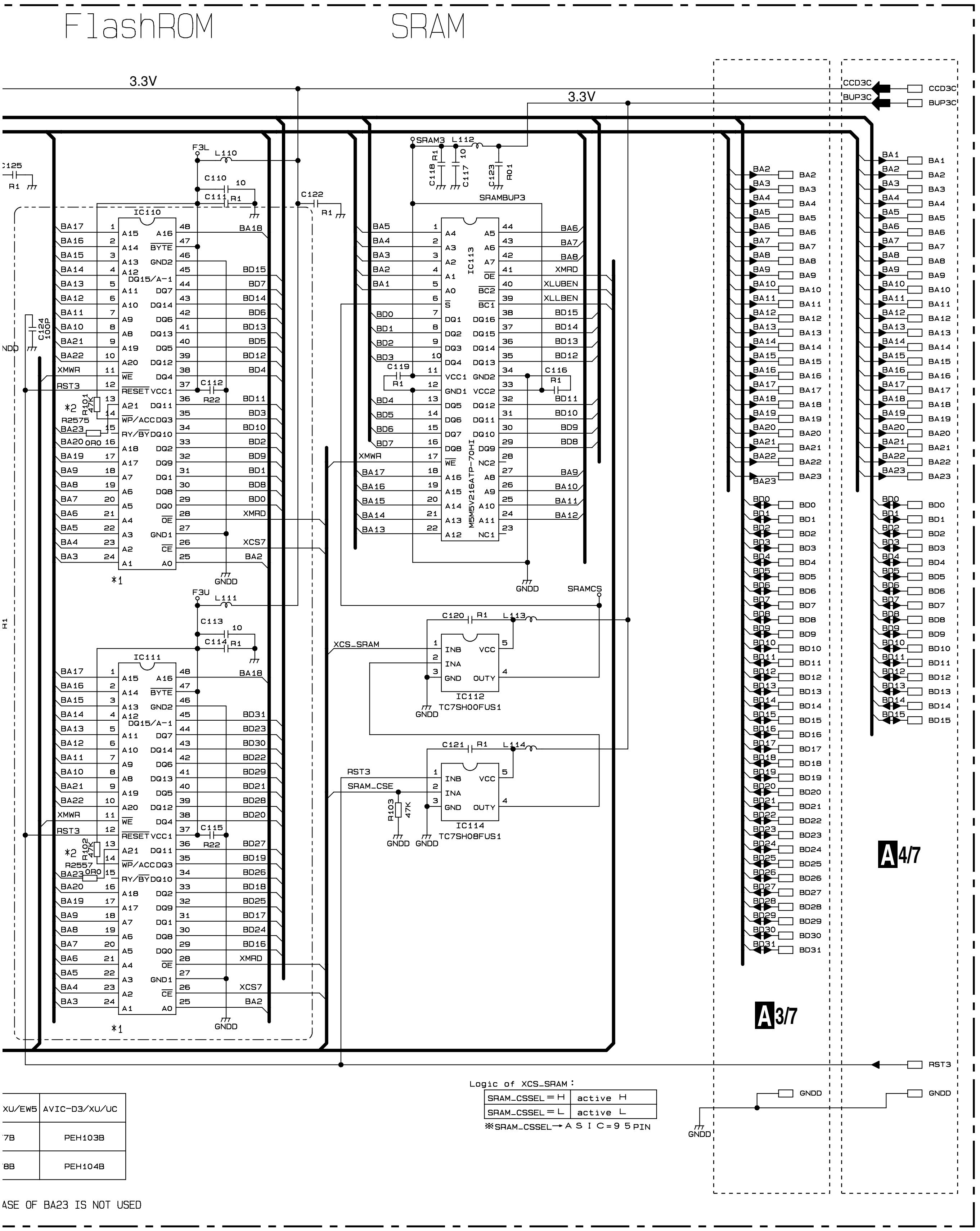


*1

	AVIC-D3/XU/EW5	AVIC-D3/XU/U
LOWER BIT IC110	PEH077B	PEH103B
UPPER BIT IC111	PEH078B	PEH104B

*2 R2575, R2557 NM IN CASE OF BA23 IS NOT

A 2/7 NAVI MOTHER UNIT (ROM, SRAM, BUS-BUFFER)


FlashROM
SRAM
3.3V
3.3V
CCD3C
BUP3C
F3L
L110
C110 10
C111 R1
C122 R1
C125 R1
C124 100P
GNDD
IC110
BA17 BA16 BA15 BA14 BA13 BA12 BA11 BA10 BA21 BA22 XMWR RST3 BA23 BA20 BA19 BA9 BA8 BA7 BA6 BA5 BA4 BA3
A15 A14 A13 A12 A11 A10 A9 A8 A19 A20 WE RESET A21 WP/ACC RY/BY A18 A17 A7 A6 A5 A4 A3 A2 A1
A16 BYTE GND2 DQ15/A-1 DQ7 DQ14 DQ6 DQ13 DQ5 DQ12 DQ4 VCC1 DQ11 DQ3 DQ10 DQ2 DQ9 DQ1 DQ8 DQ0 OE GND1 CE A0
BA18 BD15 BD7 BD14 BD6 BD13 BD5 BD12 BD4 BD11 BD3 BD10 BD2 BD9 BD1 BD8 BD0 XMRD XCS7 BA2
C112 R22
*2 R101 47K R2575 0R0
*1
F3U
L111
C113 10
C114 R1
IC111
BD31 BD23 BD30 BD22 BD29 BD21 BD28 BD20 BD27 BD19 BD26 BD18 BD25 BD17 BD24 BD16 XMRD XCS7 BA2
C115 R22
*2 R102 47K R2557 0R0
SRAM3 L112
C118 R1 C117 10 C123 R01
SRAMBUP3
IC113 M5M5V216ATP-70HI
BA5 BA4 BA3 BA2 BA1 BD0 BD1 BD2 BD3 BD4 BD5 BD6 BD7 XMWR BA17 BA16 BA15 BA14 BA13
A4 A3 A2 A1 A0 S DQ1 DQ2 DQ3 DQ4 VCC1 GND1 DQ5 DQ6 DQ7 DQ8 WE A16 A15 A14 A13 A12
A5 A6 A7 OE BC2 BC1 DQ16 DQ15 DQ14 DQ13 GND2 VCC2 DQ12 DQ11 DQ10 DQ9 NC2 A8 A9 A10 A11 NC1
BA6 BA7 BA8 XMRD XLUBEN XLLBEN BD15 BD14 BD13 BD12 BD11 BD10 BD9 BD8 BA9 BA10 BA11 BA12
C119 R1
C116 R1
GNDD
SRAMCS
C120 R1 L113
XCS_SRAM
IC112 TC7SH00FUS1
INB INA GND VCC OUTY
C121 R1 L114
RST3
SRAM_CSE
R103 47K
IC114 TC7SH08FUS1
BA1–BA23
BD0–BD31
BD0–BD15
A 3/7
A 4/7
RST3
GNDD

XU/EW5	AVIC-D3/XU/UC
7B	PEH103B
8B	PEH104B

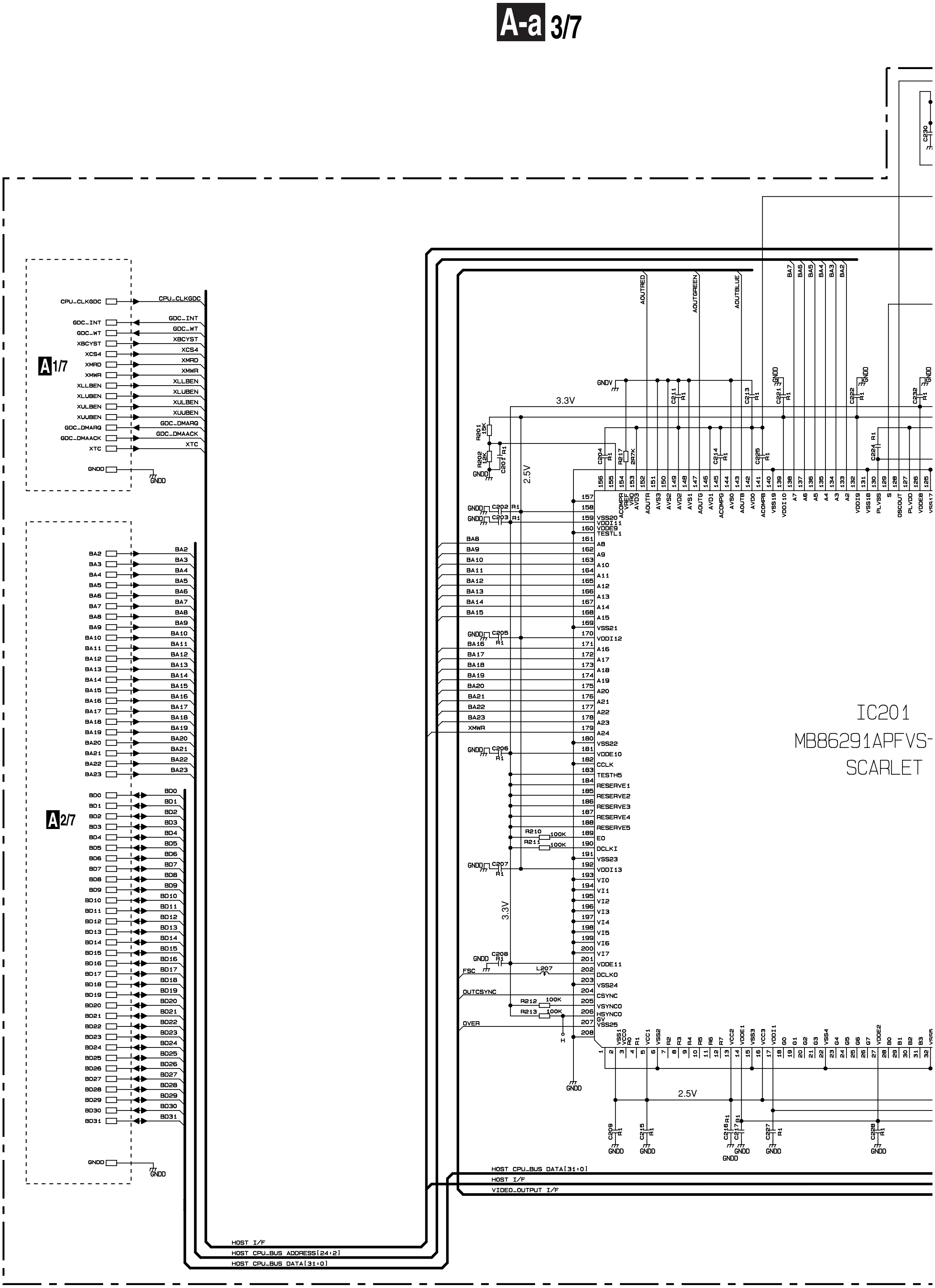
ASE OF BA23 IS NOT USED

Logic of XCS_SRAM：

SRAM_CSSEL＝H	active H
SRAM_CSSEL＝L	active L

※SRAM_CSSEL→ＡＳＩＣ＝９５PIN

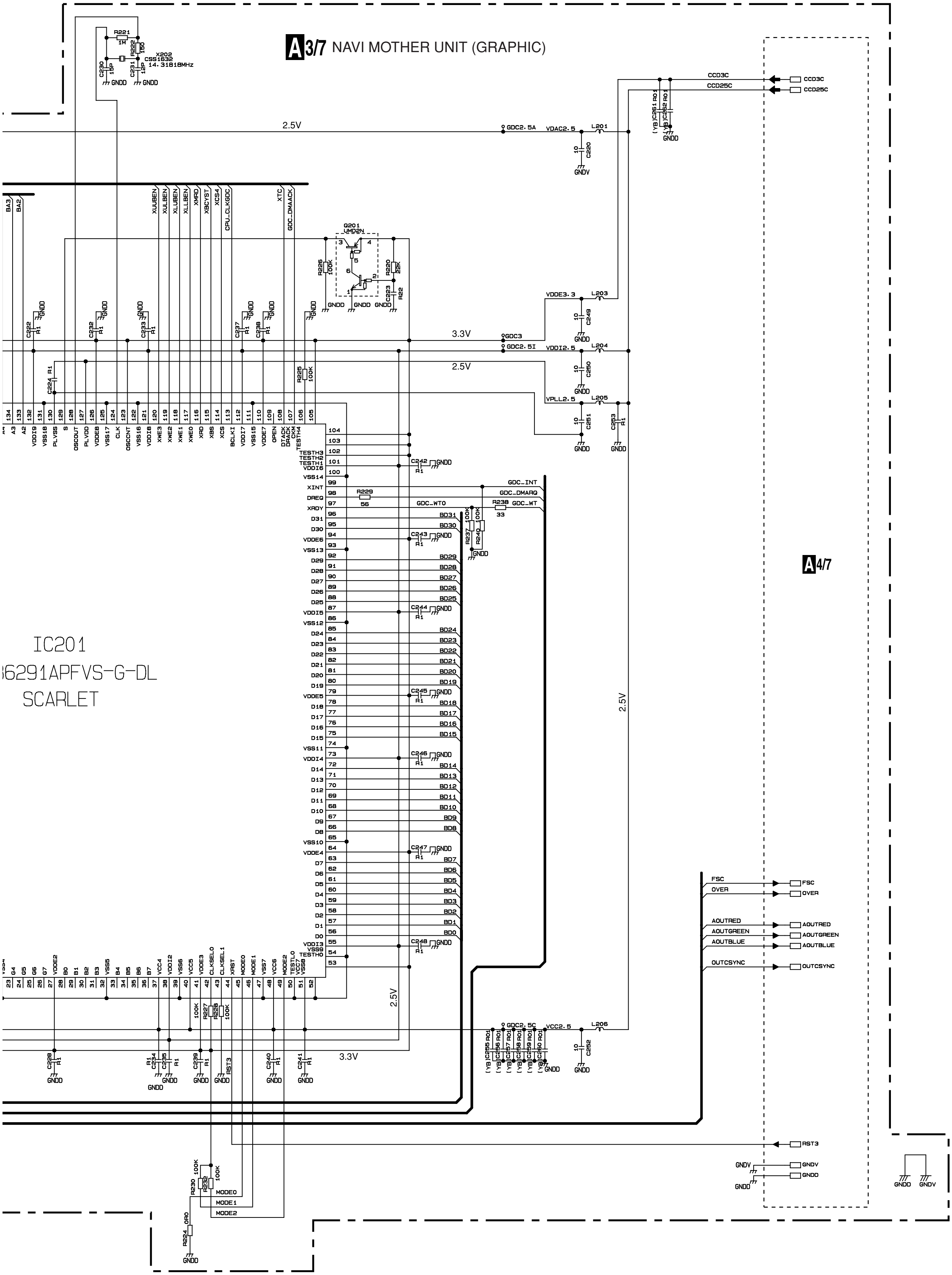
3.5 NAVI MOTHER UNIT (GRAPHIC)(GUIDE PAGE)

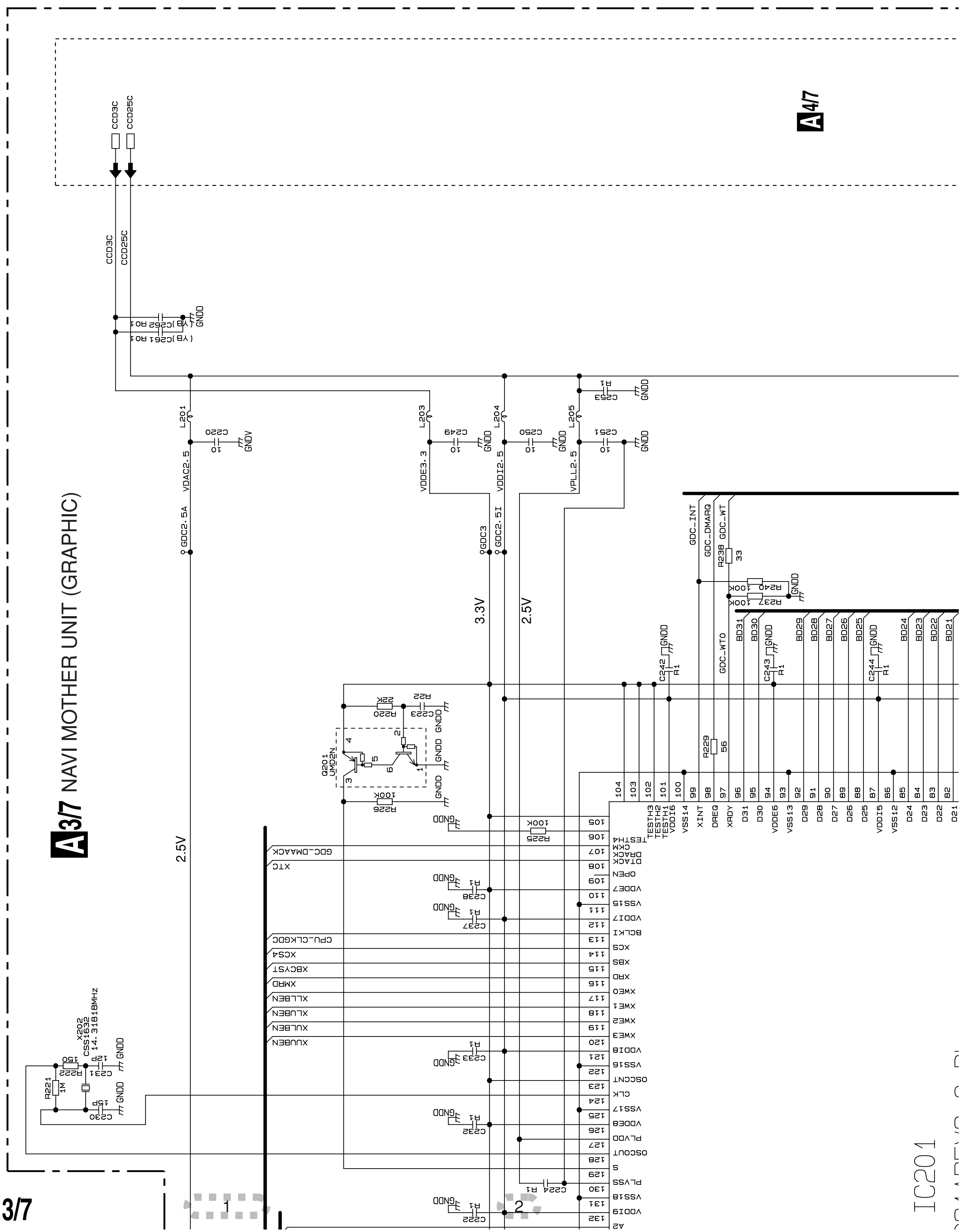

A-a 3/7
A 1/7
A 2/7
CPU_CLKGDC
GDC_INT
GDC_WT
XBCYST
XCS4
XMRD
XMWR
XLLBEN
XLUBEN
XULBEN
XUUBEN
GDC_DMARQ
GDC_DMAACK
XTC
GNDD
BA2 … BA23
BD0 … BD31
IC201
MB86291APFVS-
SCARLET
3.3V
2.5V
AOUTRED
AOUTGREEN
AOUTBLUE
GNDV
R201 15K
R202 12K
R210 100K
R211 100K
R212 100K
R213 100K
L207
FSC
OUTCSYNC
OVER
HOST CPU_BUS DATA[31:0]
HOST I/F
VIDEO_OUTPUT I/F
HOST CPU_BUS ADDRESS[24:2]
C201 C202 C203 C204 C205 C206 C207 C208 C209 C211 C213 C214 C215 C216 C217 C221 C222 C224 C225 C227 C228 C230 C232
VSS20 VDDI11 VDDE9 TESTL1 A8 A9 A10 A11 A12 A13 A14 A15 VSS21 VDDI12 A16 A17 A18 A19 A20 A21 A22 A23 A24 VSS22 VDDE10 CCLK TESTH5 RESERVE1 RESERVE2 RESERVE3 RESERVE4 RESERVE5 E0 DCLKI VSS23 VDDI13 VI0 VI1 VI2 VI3 VI4 VI5 VI6 VI7 VDDE11 DCLKO VSS24 CSYNC VSYNC0 HSYNCO GV VSS25

A 3/7

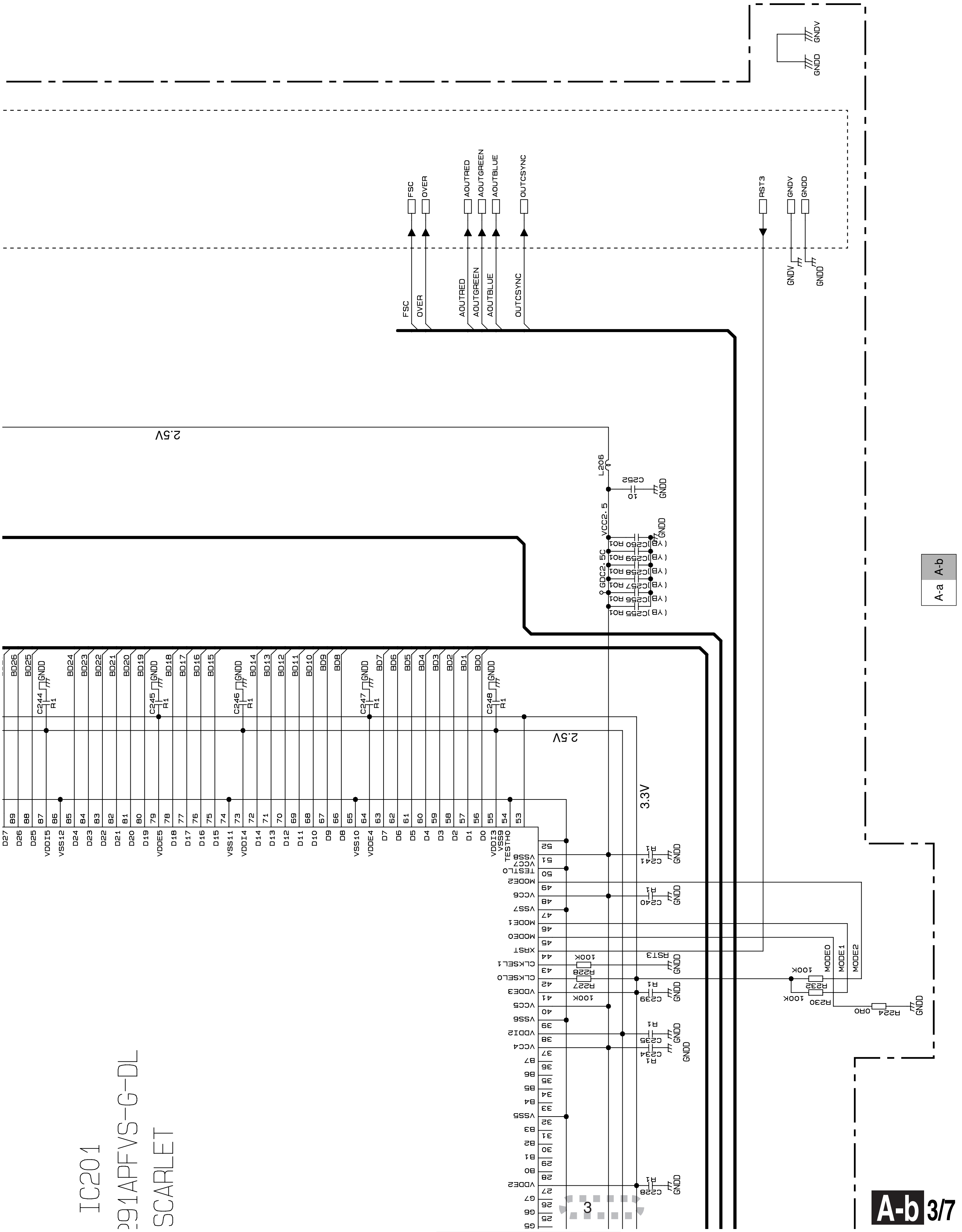
A-b 3/7

A 3/7 NAVI MOTHER UNIT (GRAPHIC)



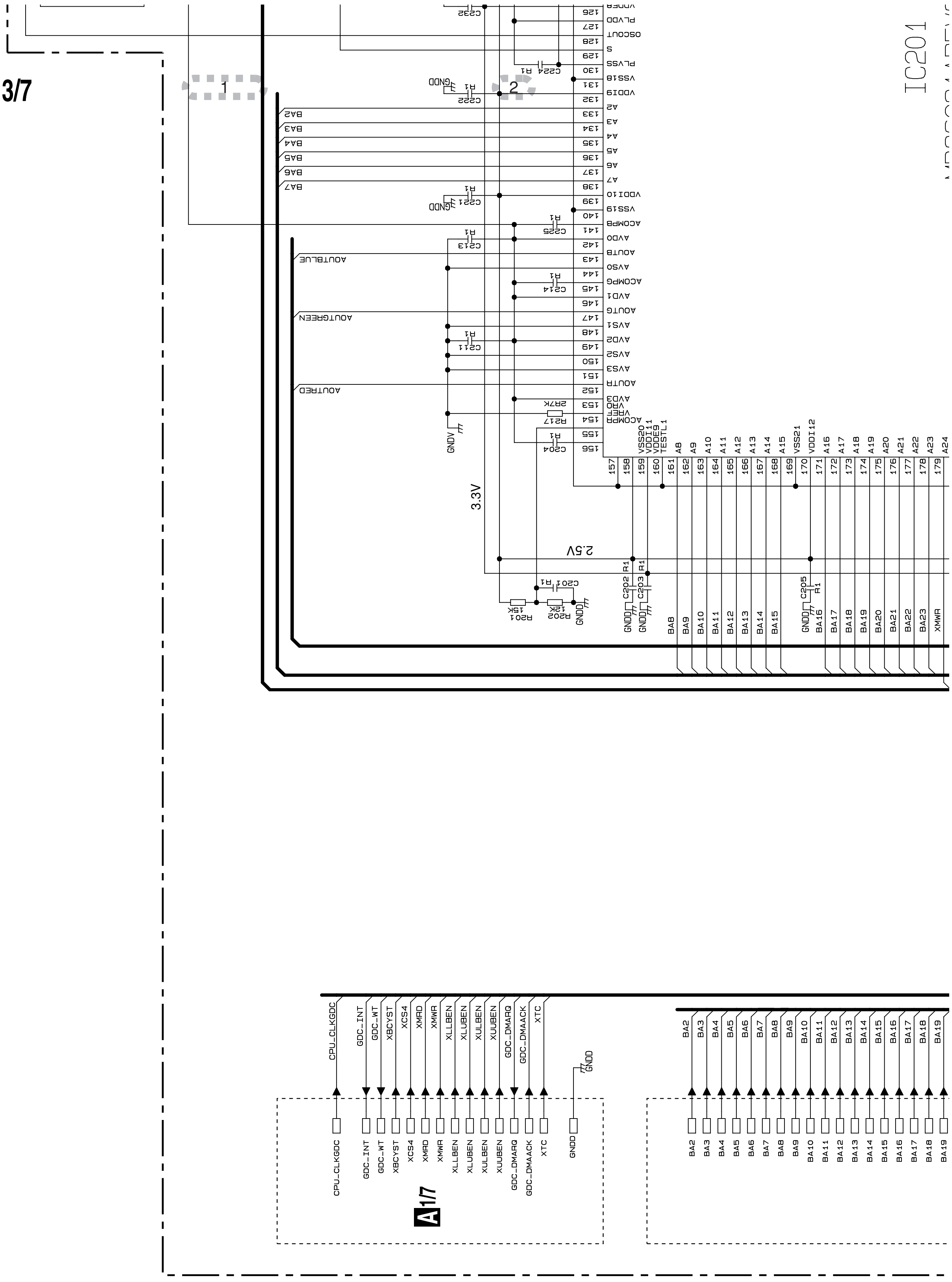


A 3/7 NAVI MOTHER UNIT (GRAPHIC)


GNDV
GNDD
FSC
OVER
AOUTRED
AOUTGREEN
AOUTBLUE
OUTCSYNC
RST3
2.5V
L206
C252
10
VCC2.5
GDC2.5C
C255
C256
C257
C258
C259
C260
A-a
A-b
BD26
BD25
BD24
BD23
BD22
BD21
BD20
BD19
BD18
BD17
BD16
BD15
BD14
BD13
BD12
BD11
BD10
BD9
BD8
BD7
BD6
BD5
BD4
BD3
BD2
BD1
BD0
C244
C245
C246
C247
C248
R1
3.3V
VDDI5
VSS12
VDDE5
VSS11
VDDI4
VSS10
VDDE4
VDDI3
VSS9
TESTHO
VSS8
VCC7
TESTLO
MODE2
VCC6
VSS7
MODE1
MODE0
XRST
CLKSEL1
CLKSEL0
VDDE3
VCC5
VSS6
VDDI2
VCC4
VSS5
VDDE2
C241
C240
C239
C235
C234
C228
R228
R227
100K
R232
R230
R224
0R0
IC201
SCARLET
3

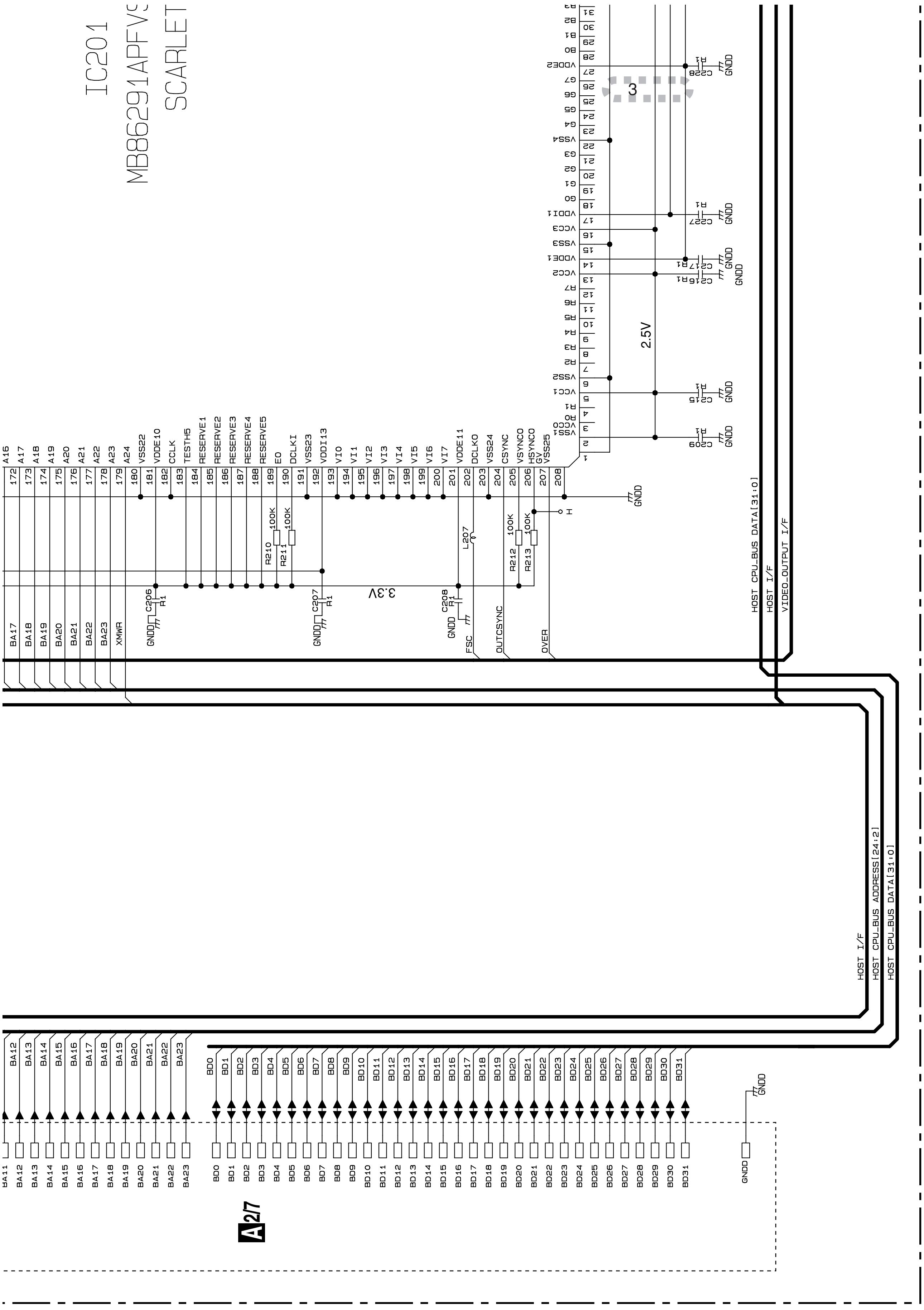
A-b 3/7

A-b 3/7


IC201
1
2
C232
C224 R1
C222 R1
GNDD
C221 R1
C225 R1
C213 R1
C214 R1
C211 R1
R217 2R7K
C204 R1
GNDV
3.3V
2.5V
C201 R1
R201 15K
R202 12K
GNDD
C202 R1
C203 R1
C205 R1
BA2
BA3
BA4
BA5
BA6
BA7
AOUTBLUE
AOUTGREEN
AOUTRED
126 VDDE8
127 PLVDD
128 OSCOUT
129 S
130 PLVSS
131 VSS18
132 VDDI9
133 A2
134 A3
135 A4
136 A5
137 A6
138 A7
139 VDDI10
140 VSS19
141 ACOMPB
142 AVD0
143 AOUTB
144 AVS0
145 ACOMPG
146 AVD1
147 AOUTG
148 AVS1
149 AVD2
150 AVS2
151 AVS3
152 AOUTR
153 AVD3
154 VRO
155 VREF
156 ACOMPR
157 VSS20
158 VDDI11
159 VDDE9
160 TESTL1
161 A8
162 A9
163 A10
164 A11
165 A12
166 A13
167 A14
168 A15
169 VSS21
170 VDDI12
171 A16
172 A17
173 A18
174 A19
175 A20
176 A21
177 A22
178 A23
179 A24
GNDD
GNDD
BA8
BA9
BA10
BA11
BA12
BA13
BA14
BA15
GNDD
BA16
BA17
BA18
BA19
BA20
BA21
BA22
BA23
XMWR
CPU_CLKGDC
GDC_INT
GDC_WT
XBCYST
XCS4
XMRD
XMWR
XLLBEN
XLUBEN
XULBEN
XUUBEN
GDC_DMARQ
GDC_DMACK
XTC
GNDD
A 1/7
BA2
BA3
BA4
BA5
BA6
BA7
BA8
BA9
BA10
BA11
BA12
BA13
BA14
BA15
BA16
BA17
BA18
BA19
A-b
A-a

A-a 3/7

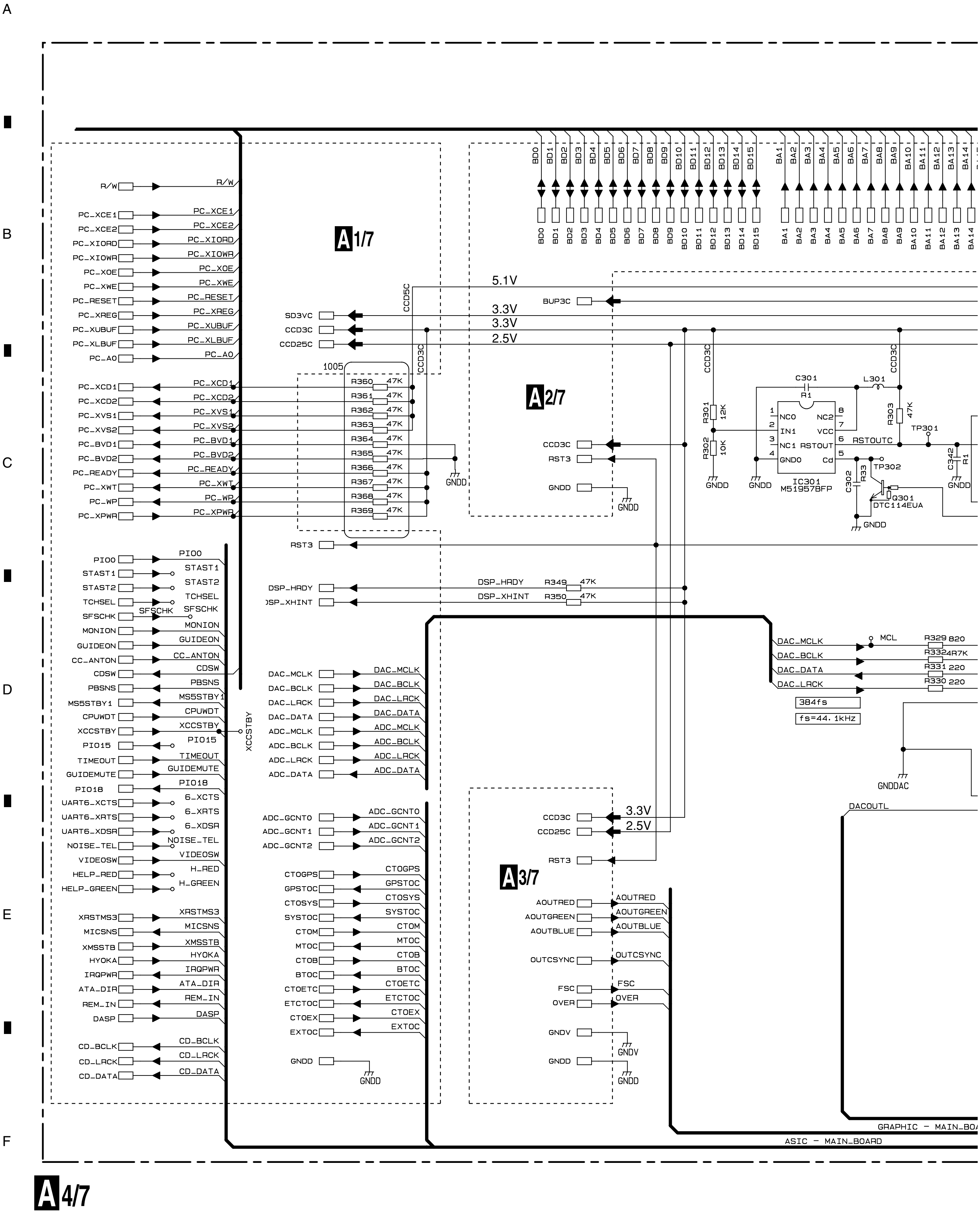
A-b 3/7



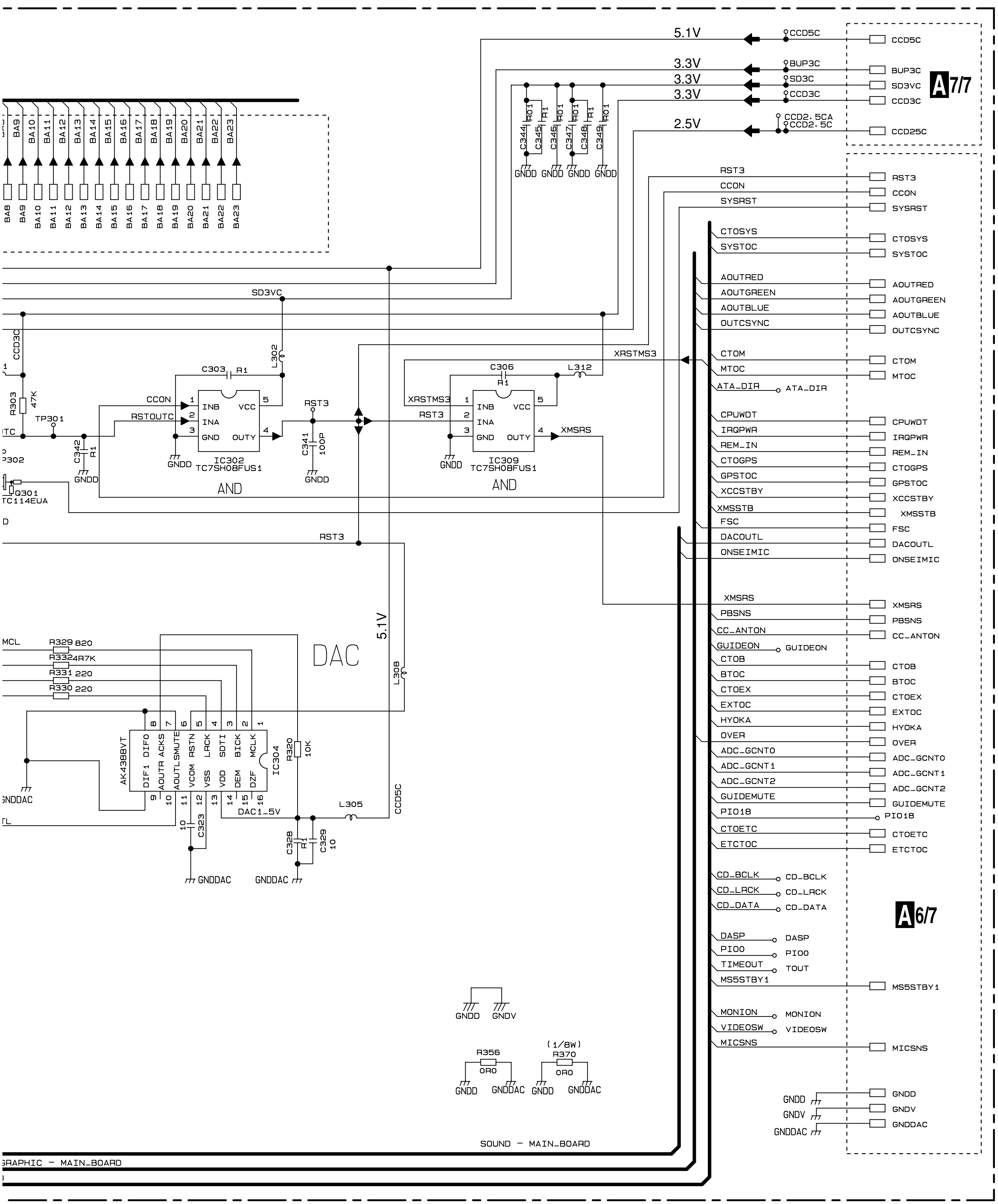
A-b
A-a

A-a 3/7

3.6 NAVI MOTHER UNIT (MAIN, CC I/F)



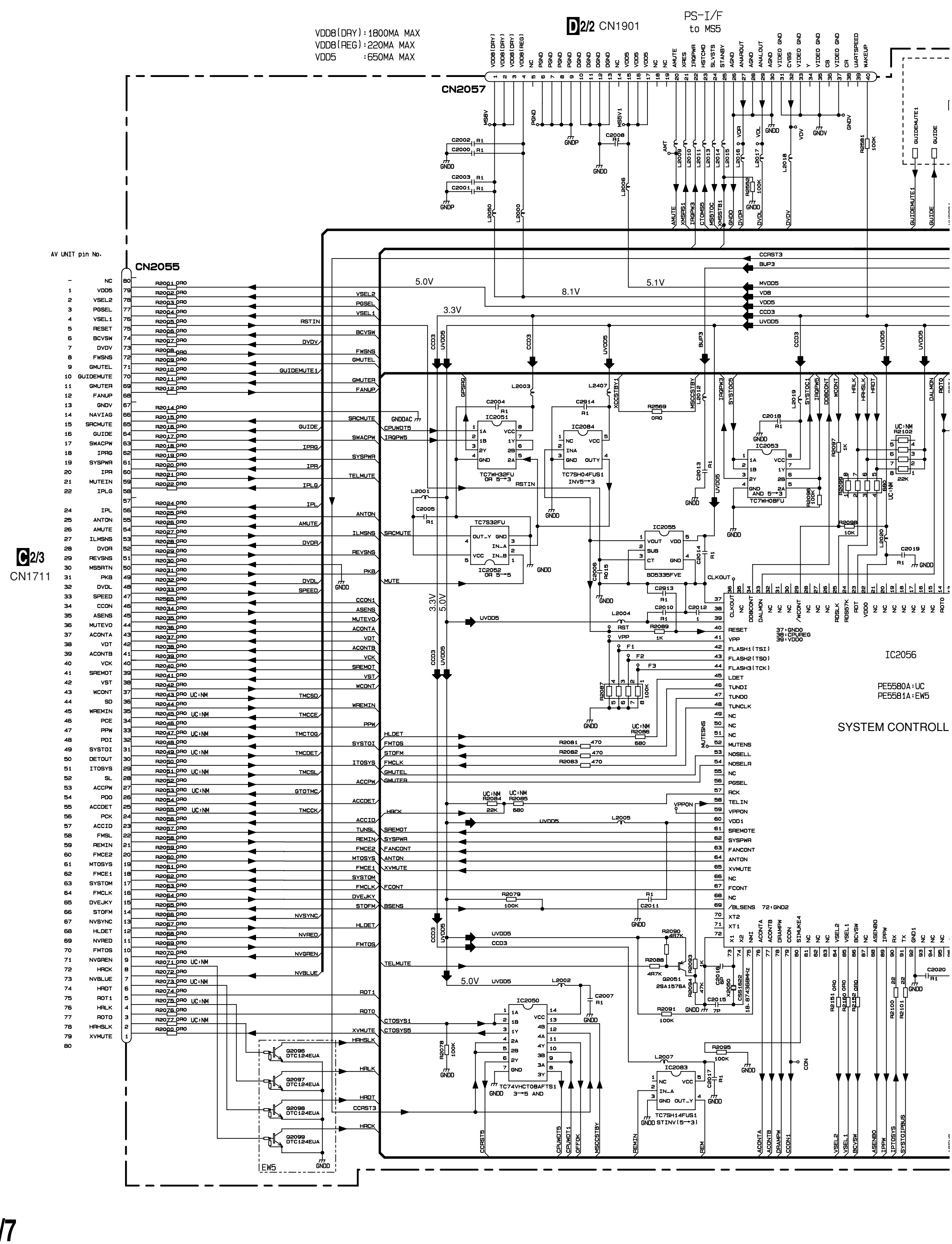
A 4/7 NAVI MOTHER UNIT (MAIN, CC I/F)



A 4/7

3.7 NAVI MOTHER UNIT (SYSTEM uCOM)(GUIDE PAGE)

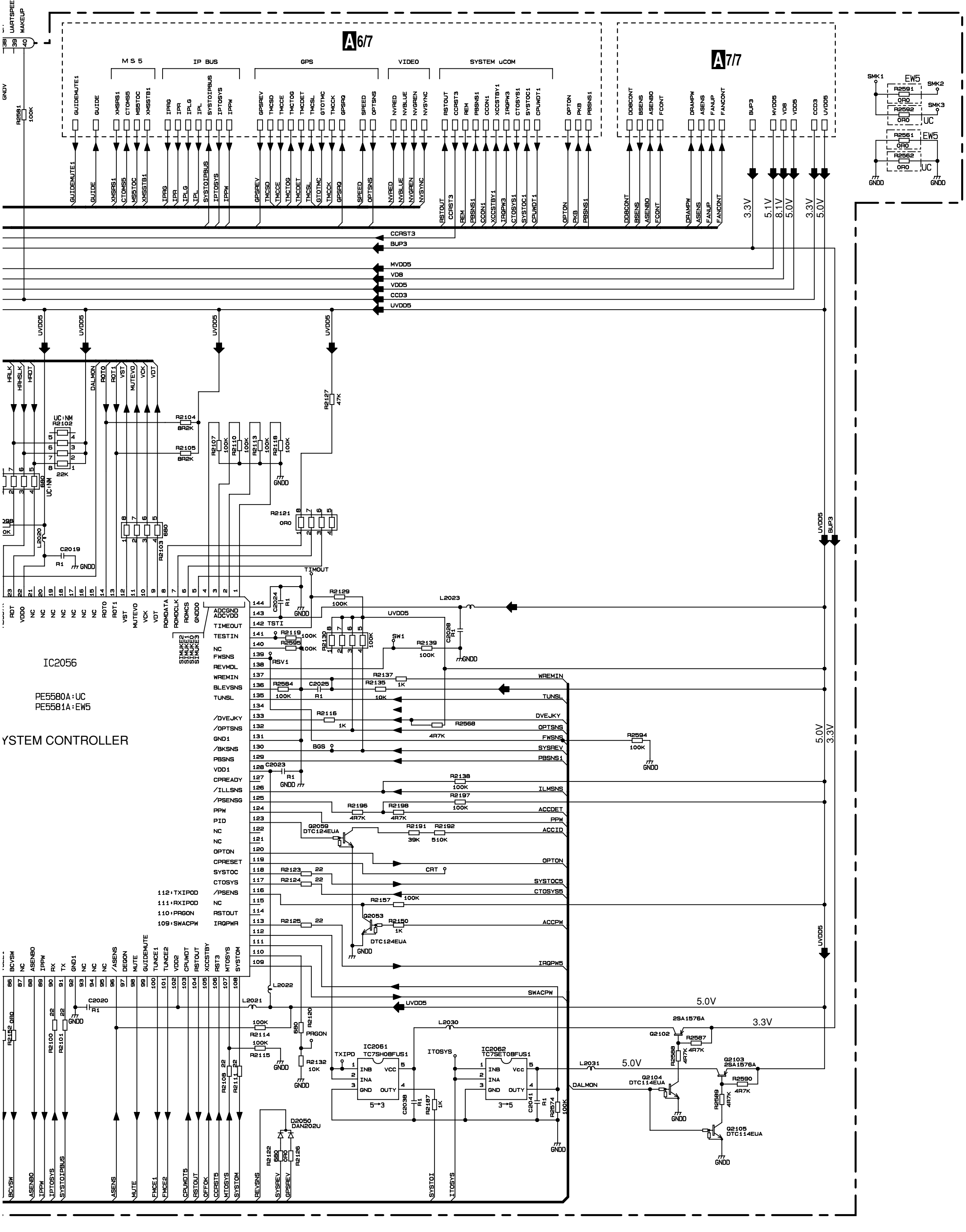
A-a 5/7



A 5/7

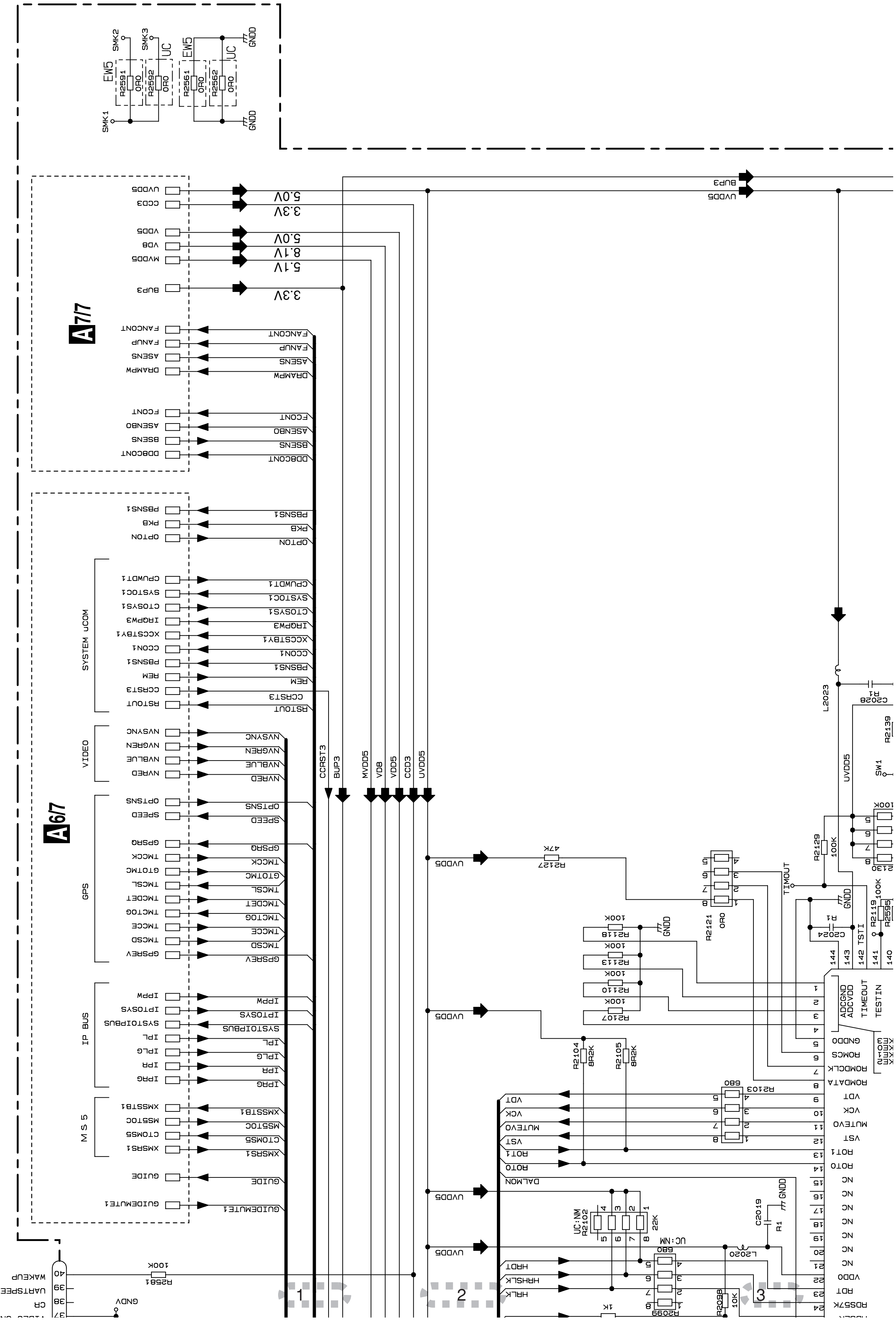
A-b 5/7

A5/7 NAVI MOTHER UNIT (SYSTEM uCOM)



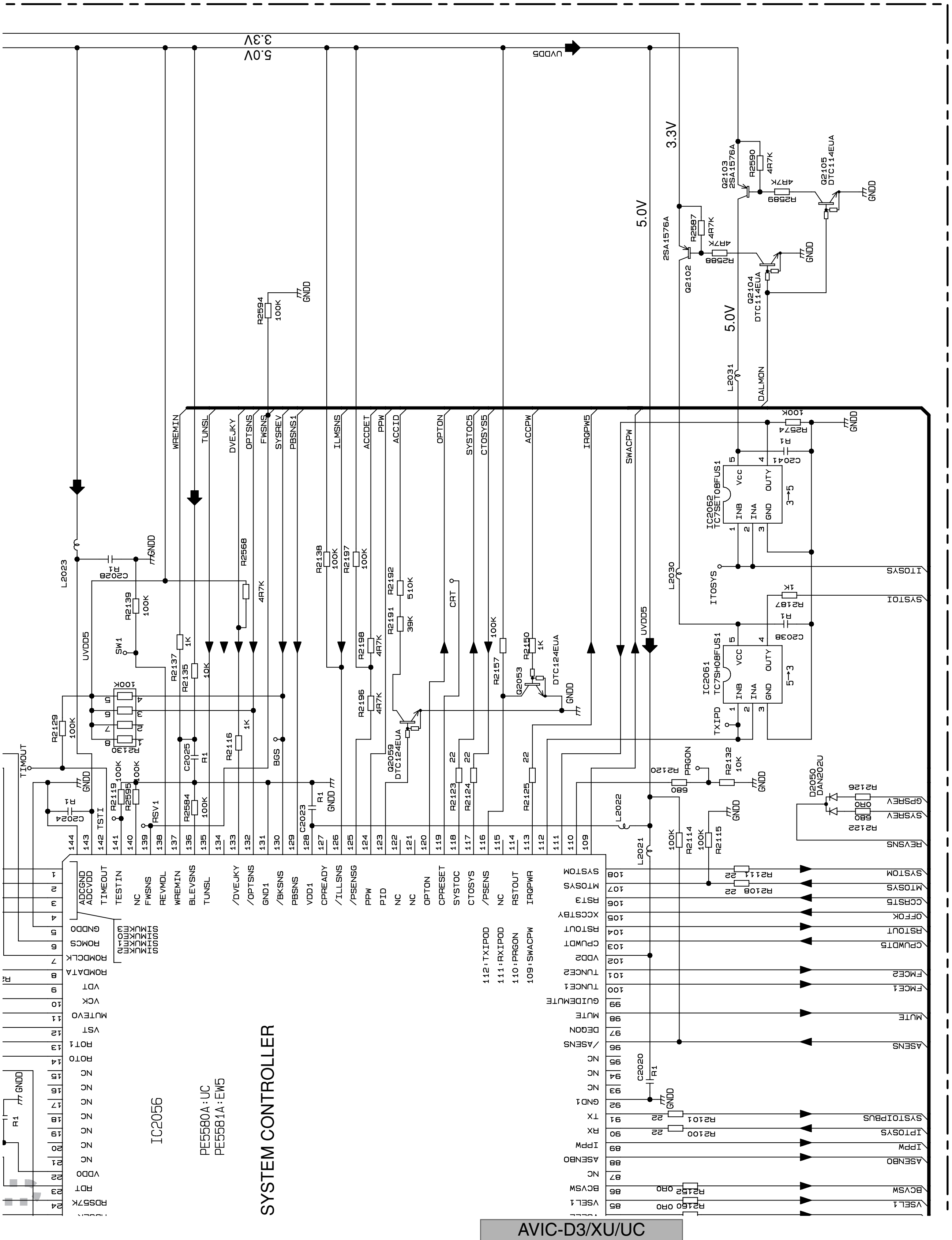
A 5/7

A 5/7 NAVI MOTHER UNIT (SYSTEM uCOM)



A-a A-b

A-b 5/7


SYSTEM CONTROLLER
IC2056
PE5580A : UC
PE5581A : EW5
3.3V
5.0V
UVDD5
GNDD
Q2102 2SA1576A
Q2103 2SA1576A
Q2104 DTC114EUA
Q2105 DTC114EUA
R2587 4R7K
R2588 4R7K
R2589 4R7K
R2590 4R7K
R2594 100K
L2031
DALMON
IC2062 TC7SET08FUS1
IC2061 TC7SH08FUS1
INB INA GND VCC OUTY
3→5
5→3
R2574 100K
C2041 R1
R2187 1K
C2038 R1
L2030
ITOSYS
SYSTOI
TXIPD
PRGON
R2120 680
R2132 10K
D2050 DAN202U
R2126 680
R2122 680
GPSREV
SYSREV
REVSNS
L2022
L2021
R2114 100K
R2115 100K
R2111 22
R2108 22
SYSTOM
MTOSYS
CCRST5
OFFOK
RSTOUT
CPUWDT5
FMCE2
FMCE1
MUTE
/ASENS
C2020 R1
R2101 22
R2100 22
SYSTOIPBUS
IPTOSYS
IPPW
ASENBO
R2152 0RΩ
R2160 0RΩ
BCVSW
VSEL1
L2023
C2028 R1
R2139 100K
SW1
R2568 4R7K
R2137 1K
R2135 10K
R2129 100K
R2130 100K
R2116 1K
C2025 R1
BGS
TIMOUT
C2024 R1
R2119 100K
R2595 100K
R2584 100K
RSV1
TSTI
C2023
R1
R2138 100K
R2197 100K
R2192 510K
R2191 39K
R2198 4R7K
R2196 4R7K
Q2059 DTC124EUA
CRT
R2157 100K
R2150 1K
Q2053 DTC124EUA
R2123 22
R2124 22
R2125 22
WREMIN TUNSL DVEJKY OPTSNS FWSNS SYSREV PBSNS1 ILMSNS ACCDET PPW ACCID OPTON SYSTOC5 CTOSYS5 ACCPW IRQPW5 SWACPW
144 ADCGND
143 ADCVDD
142 TIMEOUT
141 TESTIN
140 NC
139 FWSNS
138 REVMDL
137 WREMIN
136 BLEVSNS
135 TUNSL
134
133 /DVEJKY
132 /OPTSNS
131 GND1
130 /BKSNS
129 PBSNS
128 VDD1
127 CPREADY
126 /ILLSNS
125 /PSENSG
124 PPW
123 PID
122 NC
121 NC
120
119 OPTON
118 CPRESET
117 SYSTOC
116 CTOSYS
115 /PSENS
114 NC
113 RSTOUT
112 IRQPWR
111
110
109
112 : TXIPOD
111 : RXIPOD
110 : PRGON
109 : SWACPW
108 SYSTOM
107 MTOSYS
106 RST3
105 XCCSTBY
104 RSTOUT
103 CPUWDT
102 VDD2
101 TUNCE2
100 TUNCE1
99 GUIDEMUTE
98 MUTE
97 DEGON
96 /ASENS
95 NC
94 NC
93 NC
92 GND1
91 TX
90 RX
89 IPPW
88 ASENBO
87 NC
86 BCVSW
85 VSEL1
1
2
3
4
5 GNDDO
6 ROMCS
7 ROMCLK
8 ROMDATA
9 VDT
10 VCK
11 MUTEVO
12 VST
13 ROT1
14 ROTO
15 NC
16 NC
17 NC
18 NC
19 NC
20 NC
21 NC
22 VDDO
23 RDT
24 RDS57K
SIMUKEO
SIMUKEI
SIMUKE2

A

A-b 5/7

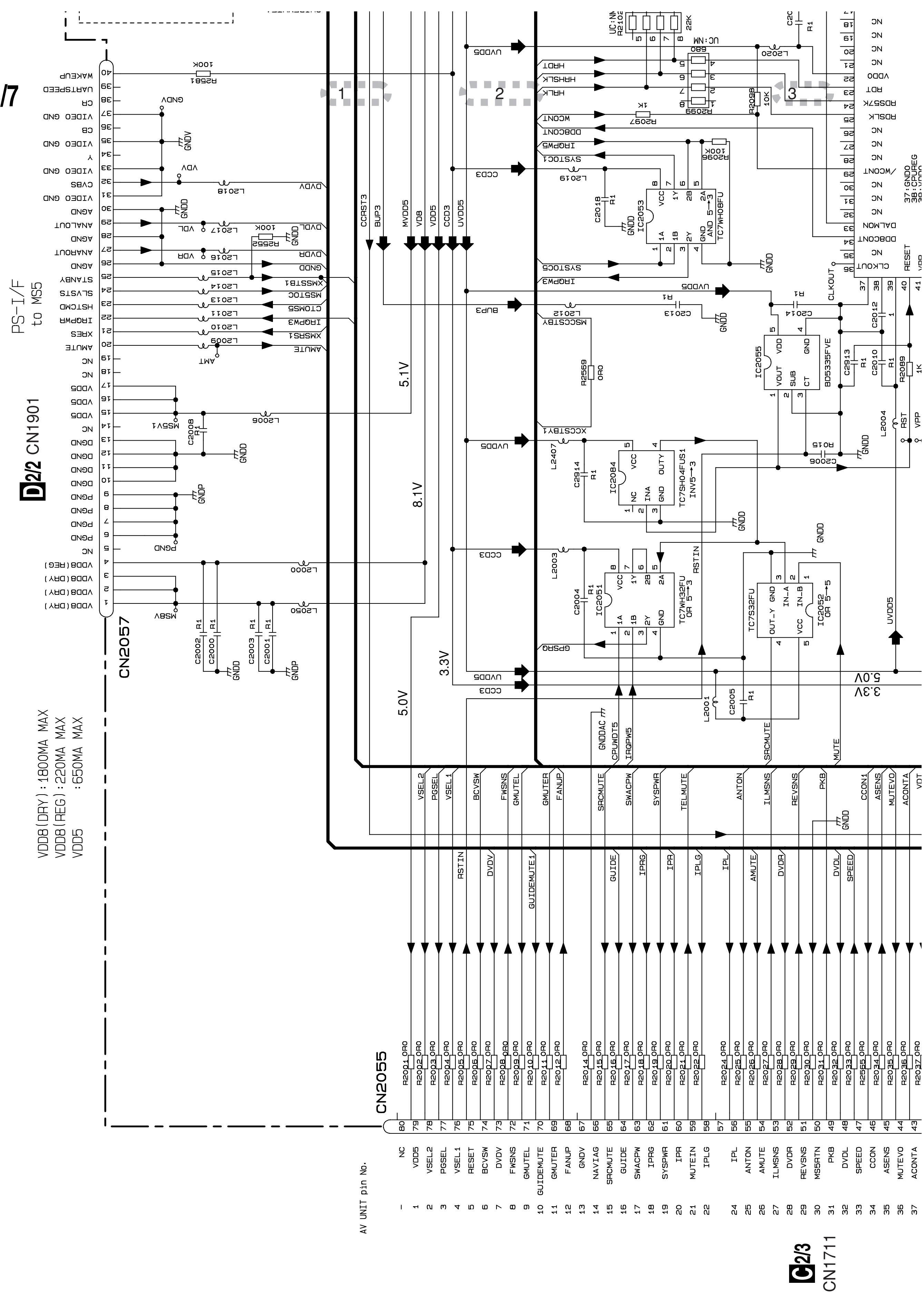
B

C

D

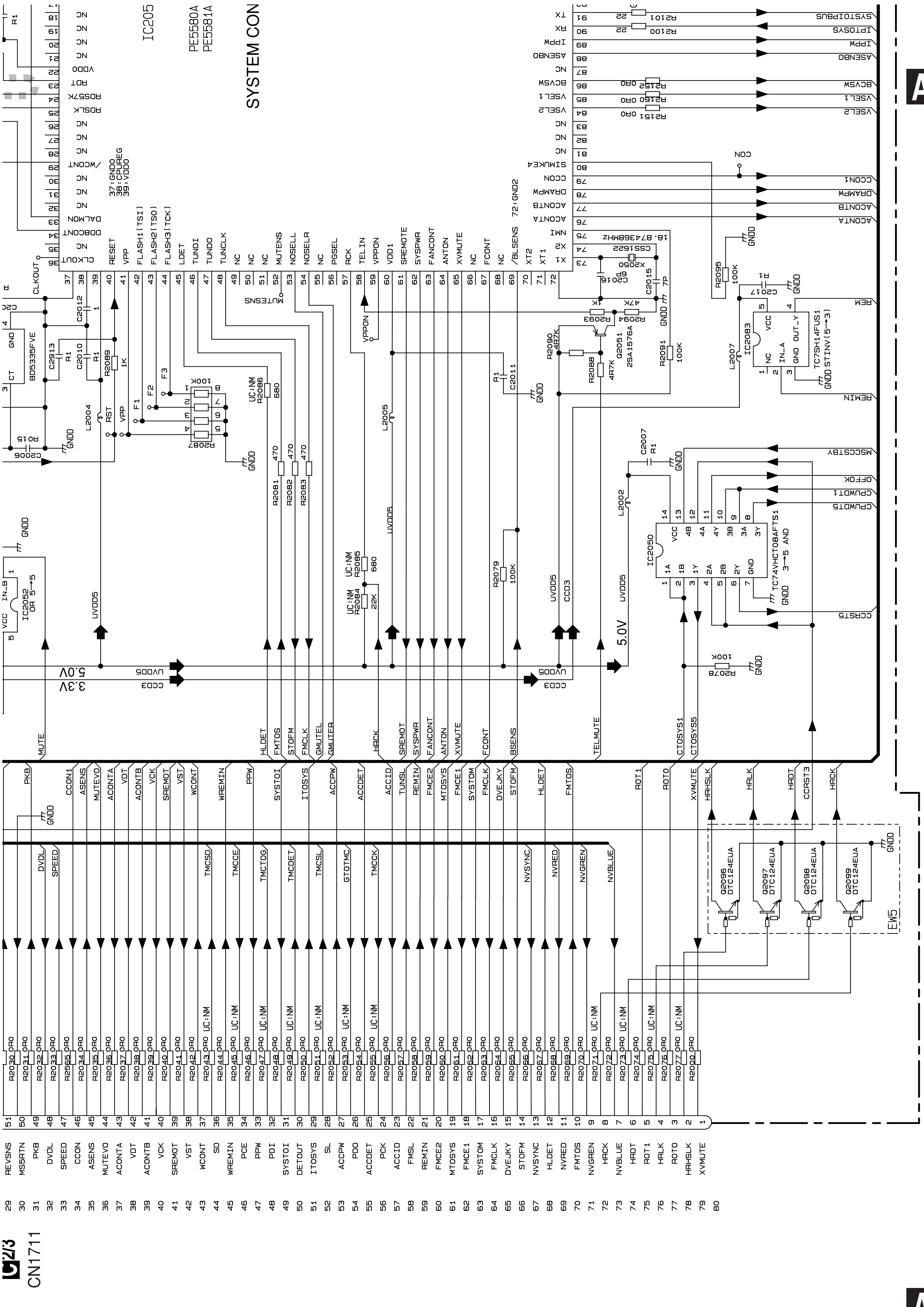
E

F



A-a 5/7

A-b 5/7

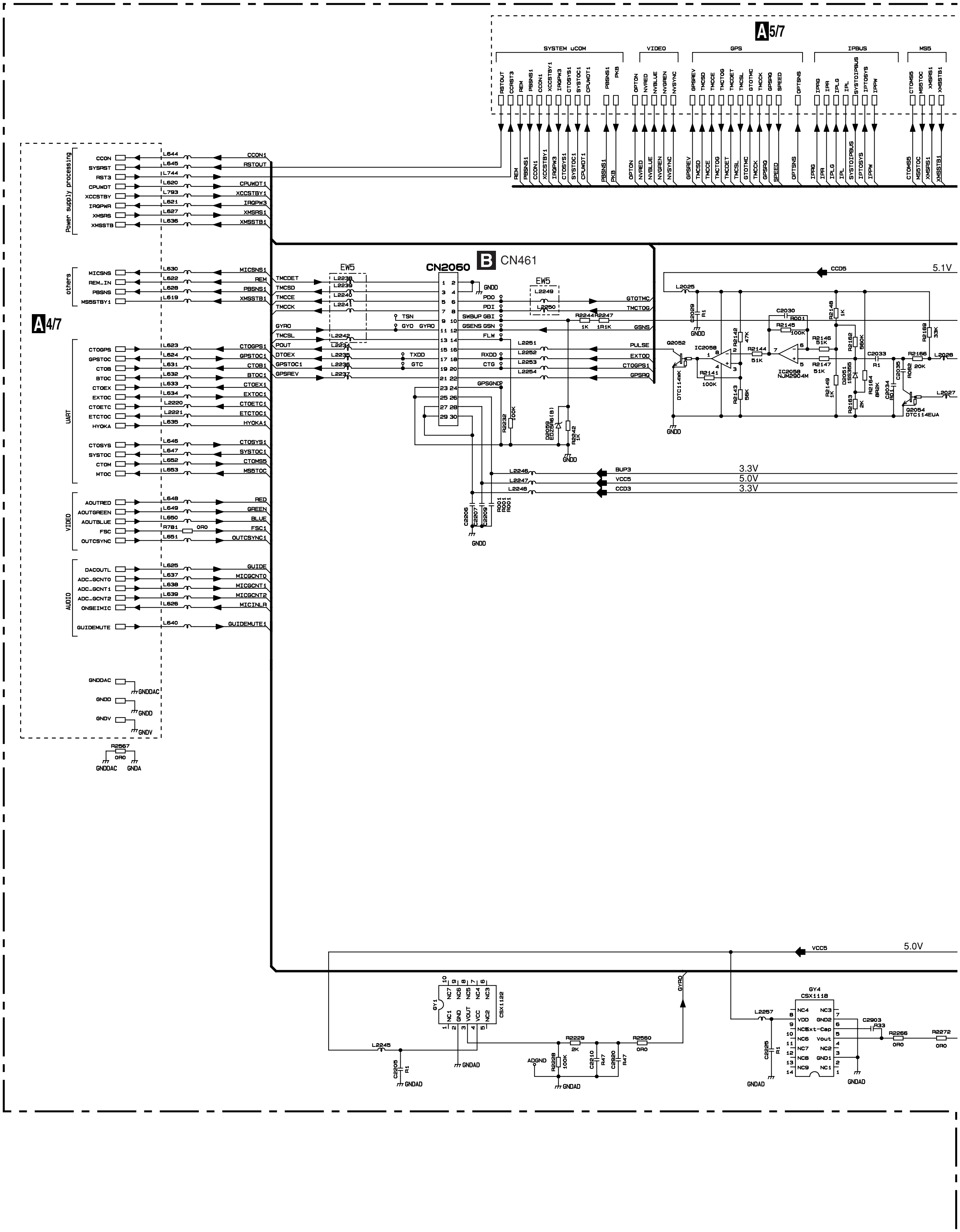


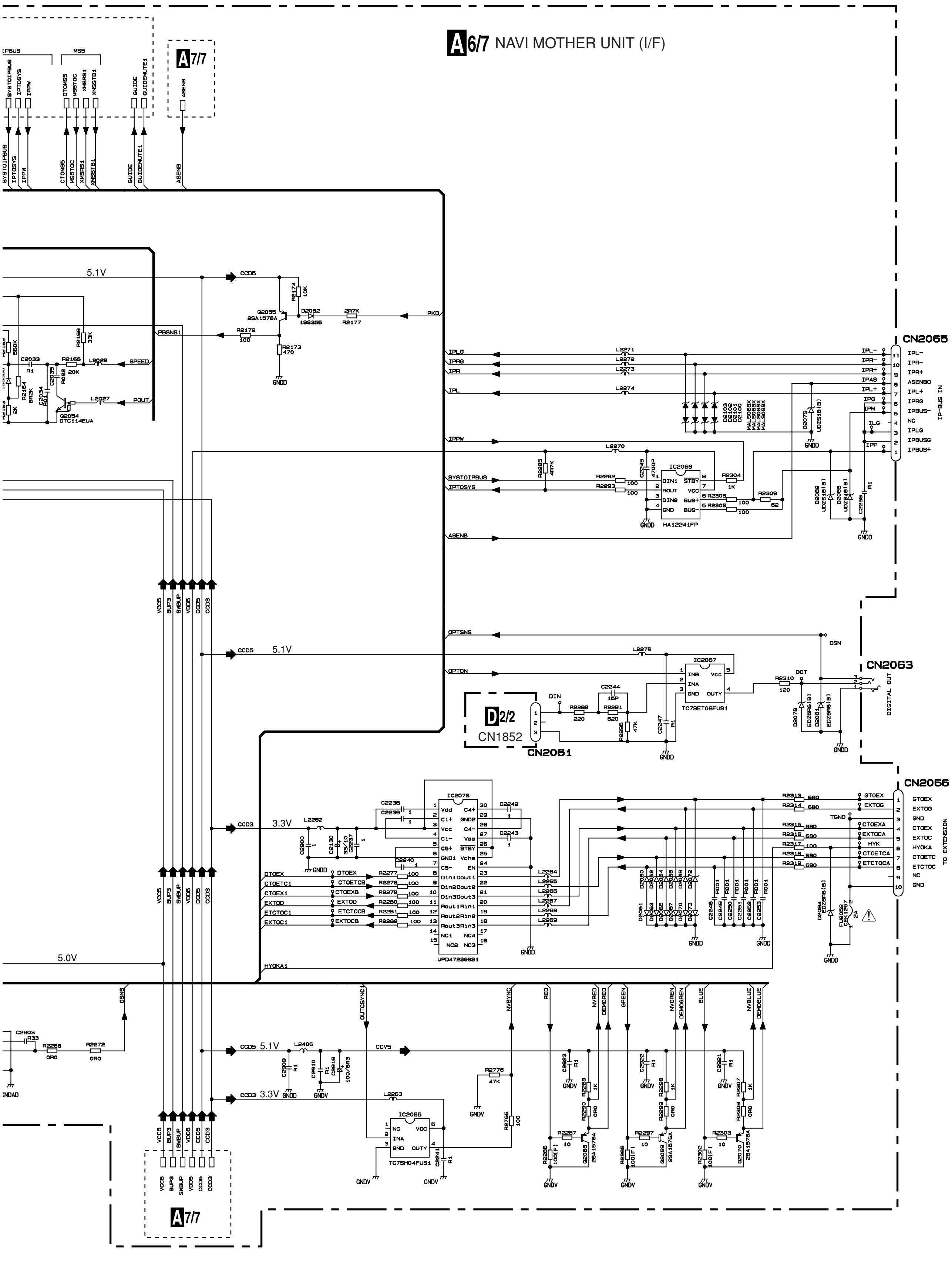
A-a A-b

A-a 5/7

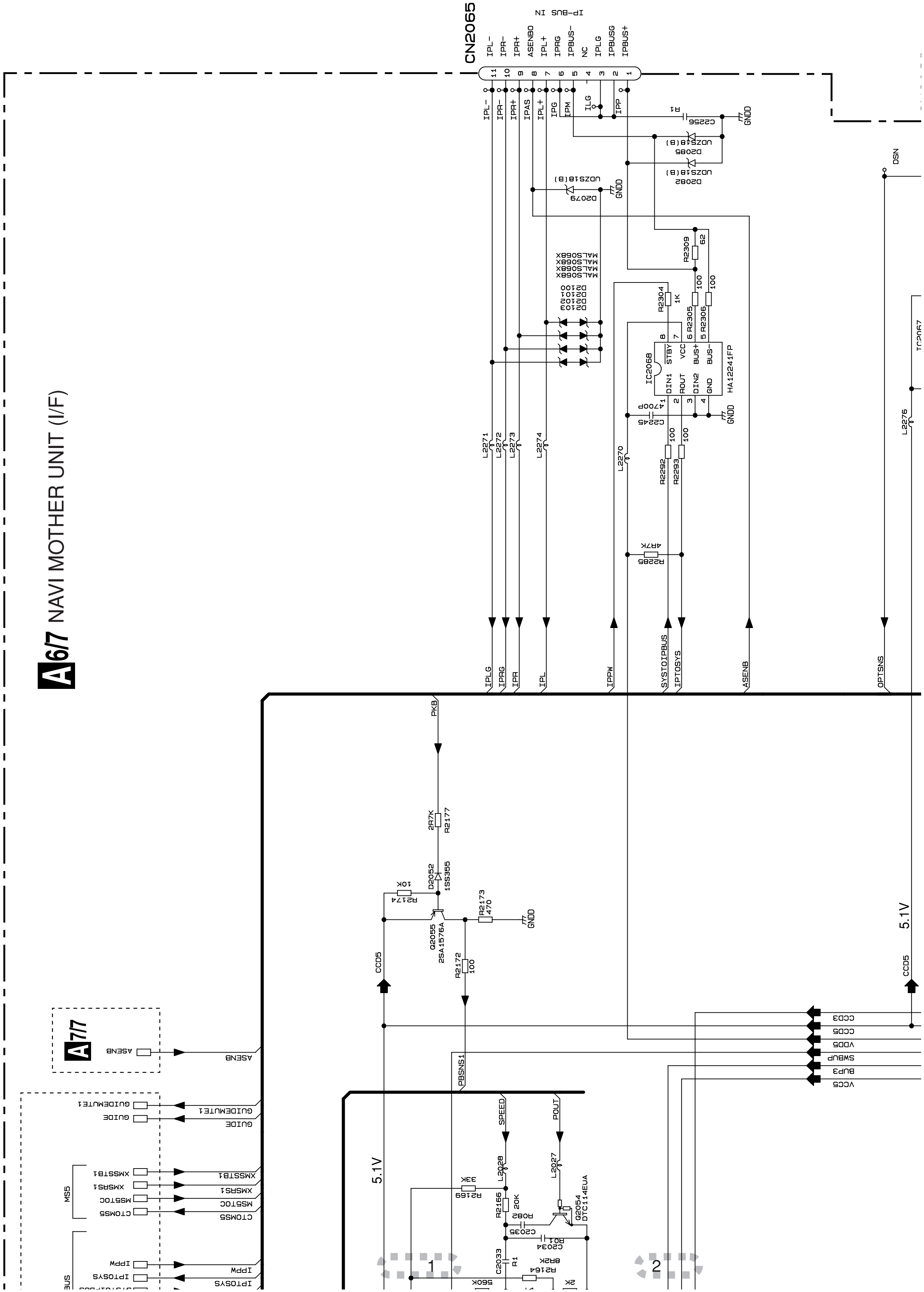
3.8 NAVI MOTHER UNIT (I/F)(GUIDE PAGE)

A-a 6/7




A 6/7 NAVI MOTHER UNIT (I/F)
A 7/7
IPBUS
MS5
SYSTOIPBUS
IPTOSYS
IPPW
CTOMS5
MS5TOC
XMSRS1
XMSSTB1
GUIDE
GUIDEMUTE1
ASENB
5.1V
CCD5
R2174 10K
Q2055 2SA1576A
D2052 1SS355
2R7K R2177
PKB
PBSNS1
R2172 100
R2173 470
GNDD
R2169 33K
R2166 20K
L2028
SPEED
C2033
C2035
C2034
R2164
Q2054 DTC114EUA
L2027
POUT
IPLG
IPRG
IPR
IPL
L2271
L2272
L2273
L2274
D2103
D2102
D2101
D2100
MAL5068X
D2079 UDZS18(B)
IPL-
IPR-
IPR+
IPAS
IPL+
IPG
IPM
ILG
IPP
CN2065
IPL-
IPR-
IPR+
ASENBO
IPL+
IPRG
IPBUS-
NC
IPLG
IPBUSG
IPBUS+
IP-BUS IN
L2270
R2285 4R7K
C2245 4700P
IC2058
DIN1 STBY
ROUT VCC
DIN2 BUS+
GND BUS-
HA12241FP
R2292 100
R2293 100
R2304 1K
R2305 100
R2306 100
R2309 62
D2082 UDZS18(B)
D2085 UDZS18(B)
C2286 R1
ASENB
VCC5
BUP3
SWBUP
VDD5
CCD5
CCD3
OPTSNS
DSN
L2276
OPTON
IC2057
INB Vcc
INA
GND OUTY
TC7SET08FUS1
R2310 120
DOT
CN2063
DIGITAL OUT
D2078 EDZ5R6(B)
D2081 EDZ5R6(B)
D2080
D 2/2
CN1852
CN2061
DIN
R2288 220
C2244 15P
R2291 620
R2295 47K
C2247 R1
GNDD
3.3V
L2262
C2238
C2239
C2900
C2130
C2237 33/10
C2240
IC2078
Vdd C4+
C1+ GND2
Vcc C4-
C1- Vss
C5+ STBY
GND1 Vcha
C5- EN
Din1 Dout1
Din2 Dout2
Din3 Dout3
Rout1 Rin1
Rout2 Rin2
Rout3 Rin3
NC1 NC4
NC2 NC3
UPD4723GS51
C2242
C2243
DTOEX
CTOETC1
CTOEX1
EXTOD
ETCTOC1
EXTOC1
CTOETCB
CTOEXB
ETCTOCB
EXTOCB
R2277 100
R2278 100
R2279 100
R2280 100
R2281 100
R2282 100
L2264
L2265
L2266
L2267
L2268
L2269
R2313 680
R2314 680
R2315 680
R2316 680
R2317 100
R2318 680
R2319 680
GTOEX
EXTOG
TGND
CTOEXA
EXTOCA
HYK
CTOETCA
ETCTOCA
CN2066
GTOEX
EXTOG
GND
CTOEX
EXTOC
HYOKA
CTOETC
ETCTOC
NC
GND
TO EXTENSION
D2084 EDZ5R6(B)
FU2001 CEK1257 2A
5.0V
HYOKA1
GSNS
C2903
R33
R2266 0R0
R2272 0R0
GNDAD
OUTCSYNC1
NVSYNC
RED
NVRED
DEMORED
GREEN
NVGREN
DEMOGREN
BLUE
NVBLUE
DEMOBLUE
CCD5 5.1V
L2405
CCV5
C2909
C2910
C2916 100/6R3
CCD3 3.3V
GNDV
L2263
IC2065
NC VCC
INA
GND OUTY
TC7SH04FUS1
C2241 R1
R2776 47K
R2766 100
C2923
R2289 1K
R2290 0R0
R2287 10
R2286 100(F)
Q2068 2SA1576A
C2922
R2298 1K
R2299 0R0
R2297 10
R2296 100(F)
Q2069 2SA1576A
C2921
R2307 1K
R2308 0R0
R2303 10
R2302 100(F)
Q2070 2SA1576A
A 7/7

A 6/7 NAVI MOTHER UNIT (I/F)



A

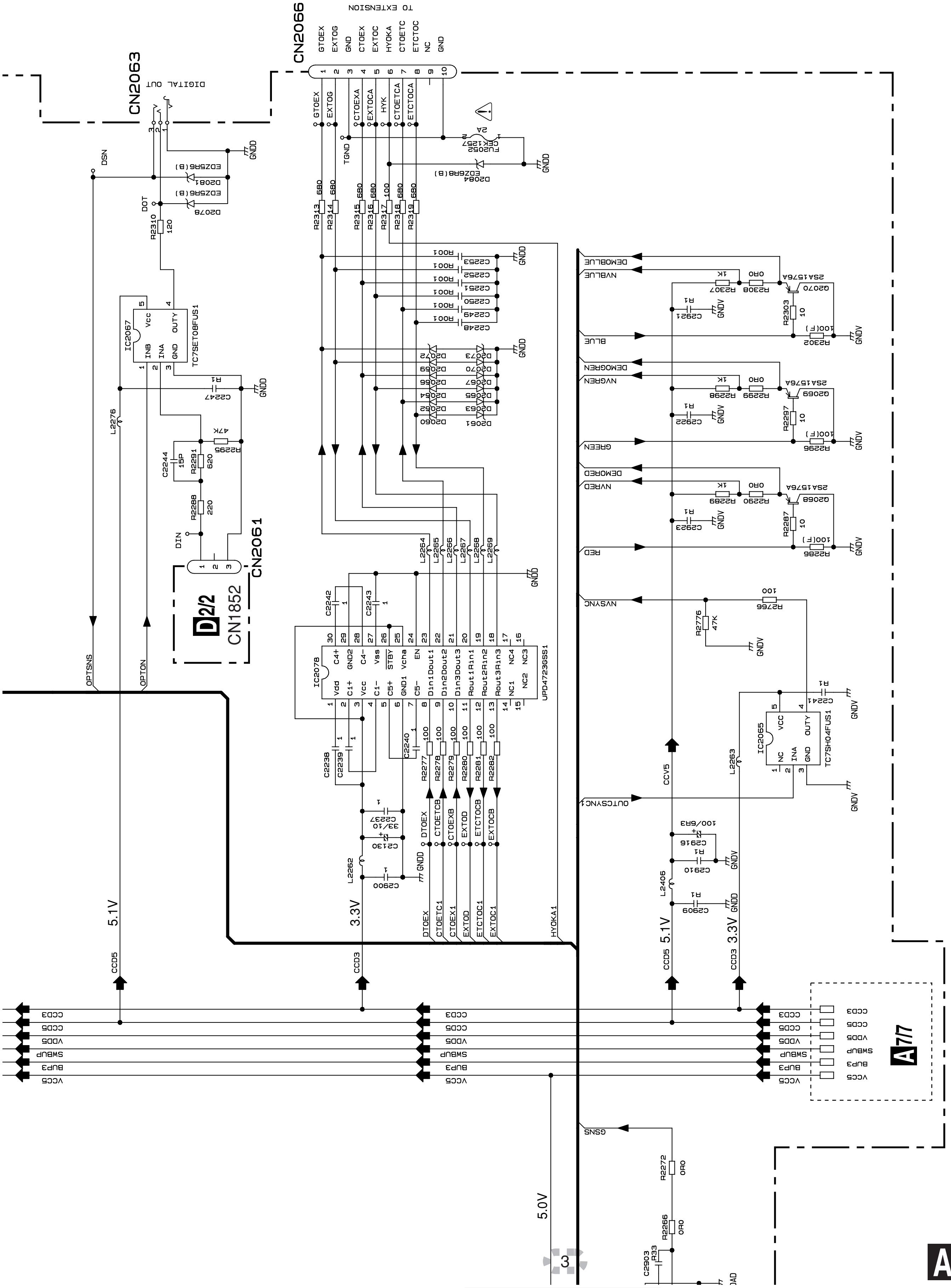
B

C

D

E

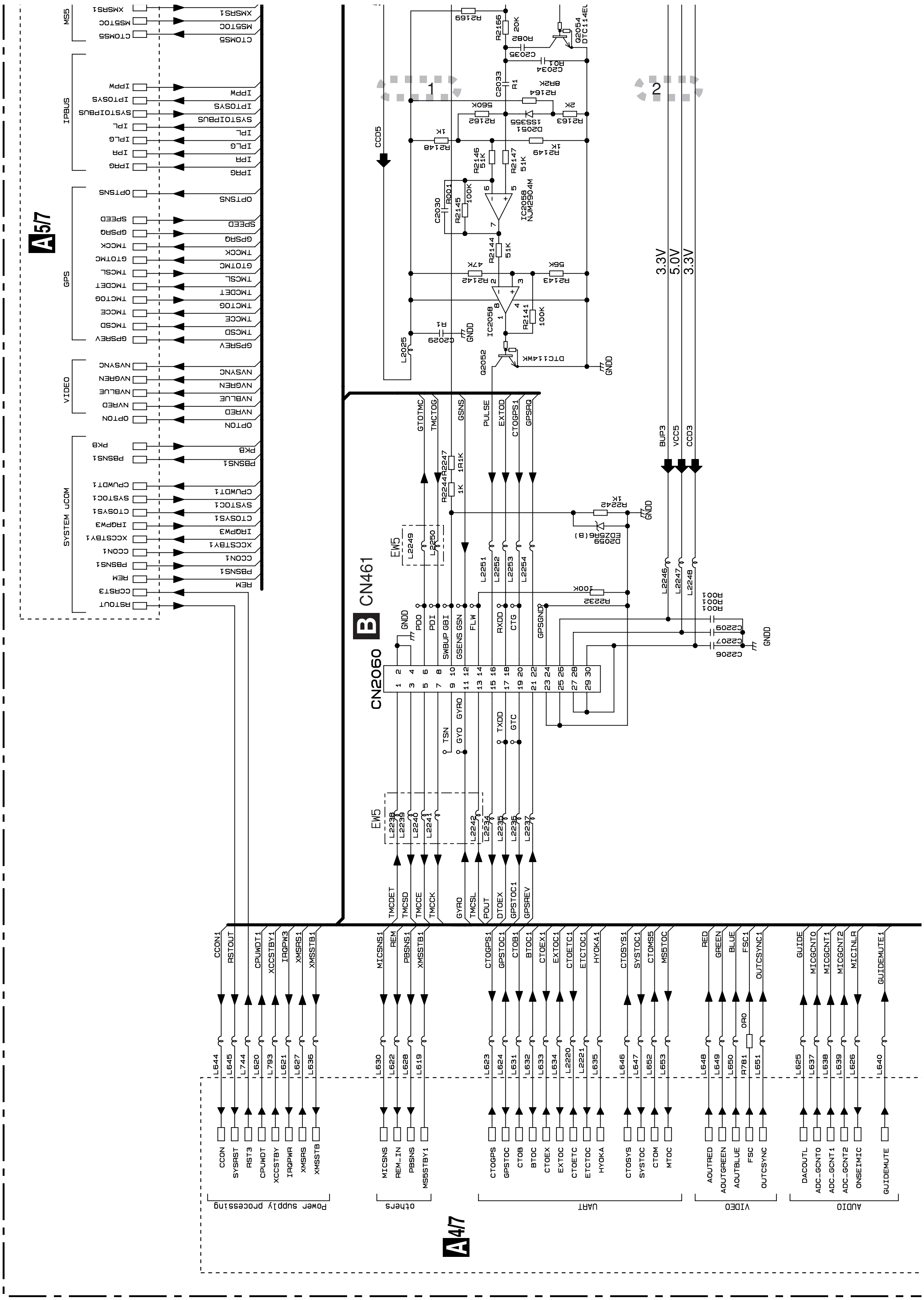
F



A-a A-b

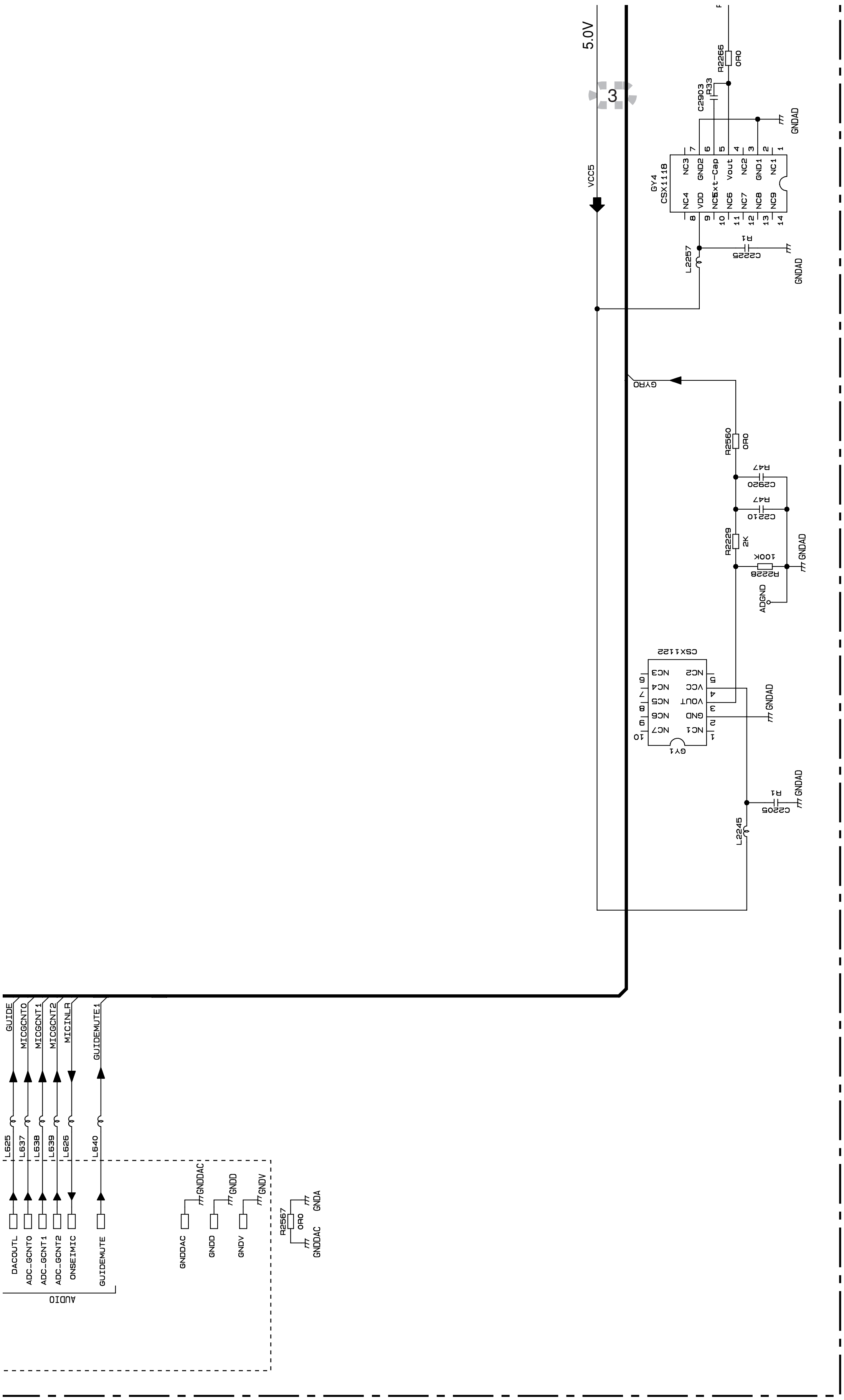
A-b 6/7

A-b 6/7



A-b
A-a

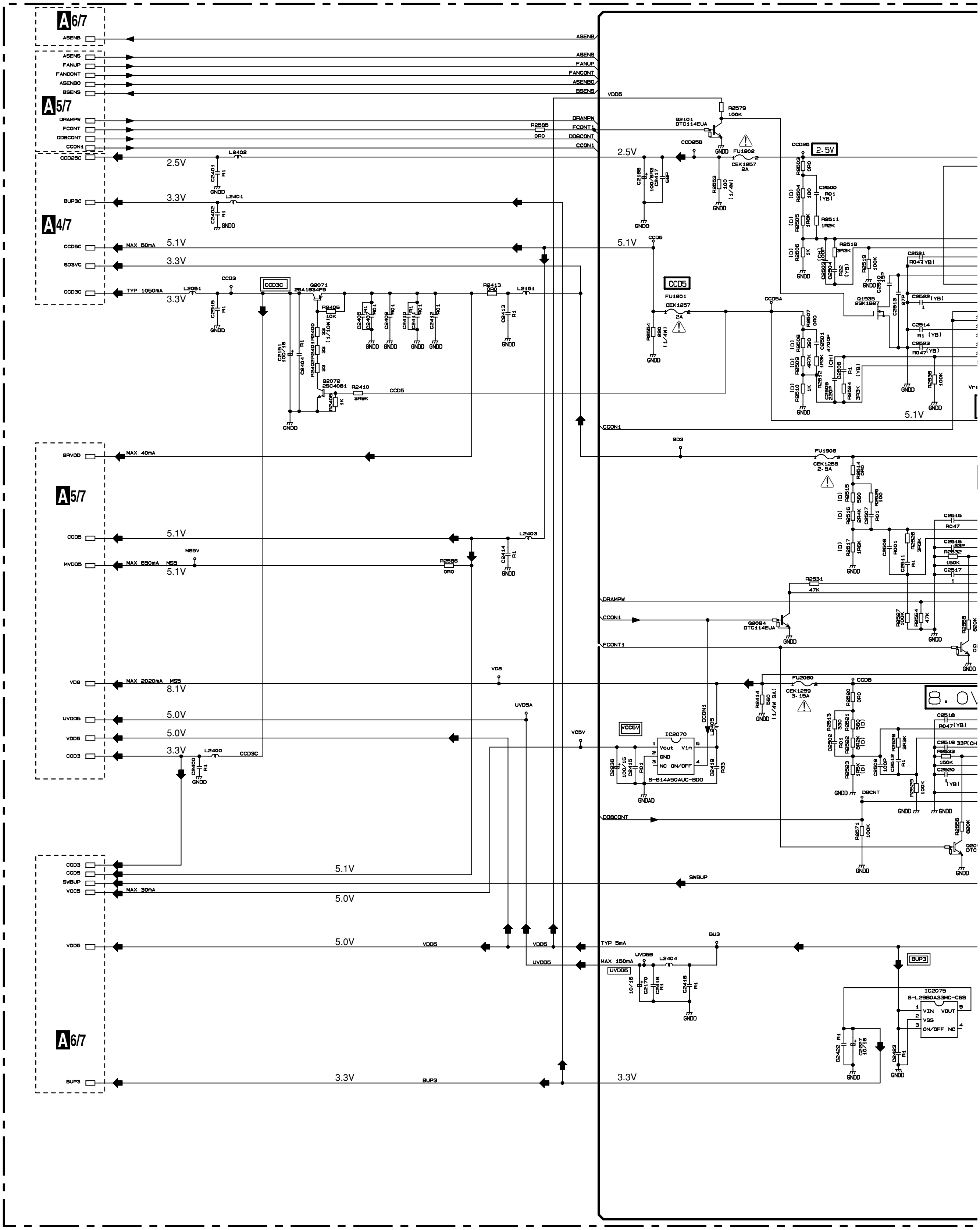
A-a 6/7


5.0V
3
VCC5
R2266
0R0
C2903
R33
GNDAD
GY4
CSX1118
NC4
VDD
NC5
NC6
NC7
NC8
NC9
NC3
GND2
Ext-Cap
Vout
NC2
GND1
NC1
L2257
C2225
R1
GNDAD
GYRO
R2560
0R0
C2920
R47
C2210
R47
R2229
2K
R2228
100K
GNDAD
ADGND
CSX1122
GY1
NC2
VCC
VOUT
GND
NC1
NC3
NC4
NC5
NC6
NC7
GNDAD
C2205
R1
GNDAD
L2245
GUIDE
MICGCNT0
MICGCNT1
MICGCNT2
MICINLR
GUIDEMUTE1
L625
L637
L638
L639
L626
L640
DACOUTL
ADC_GCNT0
ADC_GCNT1
ADC_GCNT2
ONSEIMIC
GUIDEMUTE
AUDIO
GNDDAC
GNDD
GNDV
GNDDAC
GNDD
GNDV
R2567
0R0
GNDA
GNDDAC

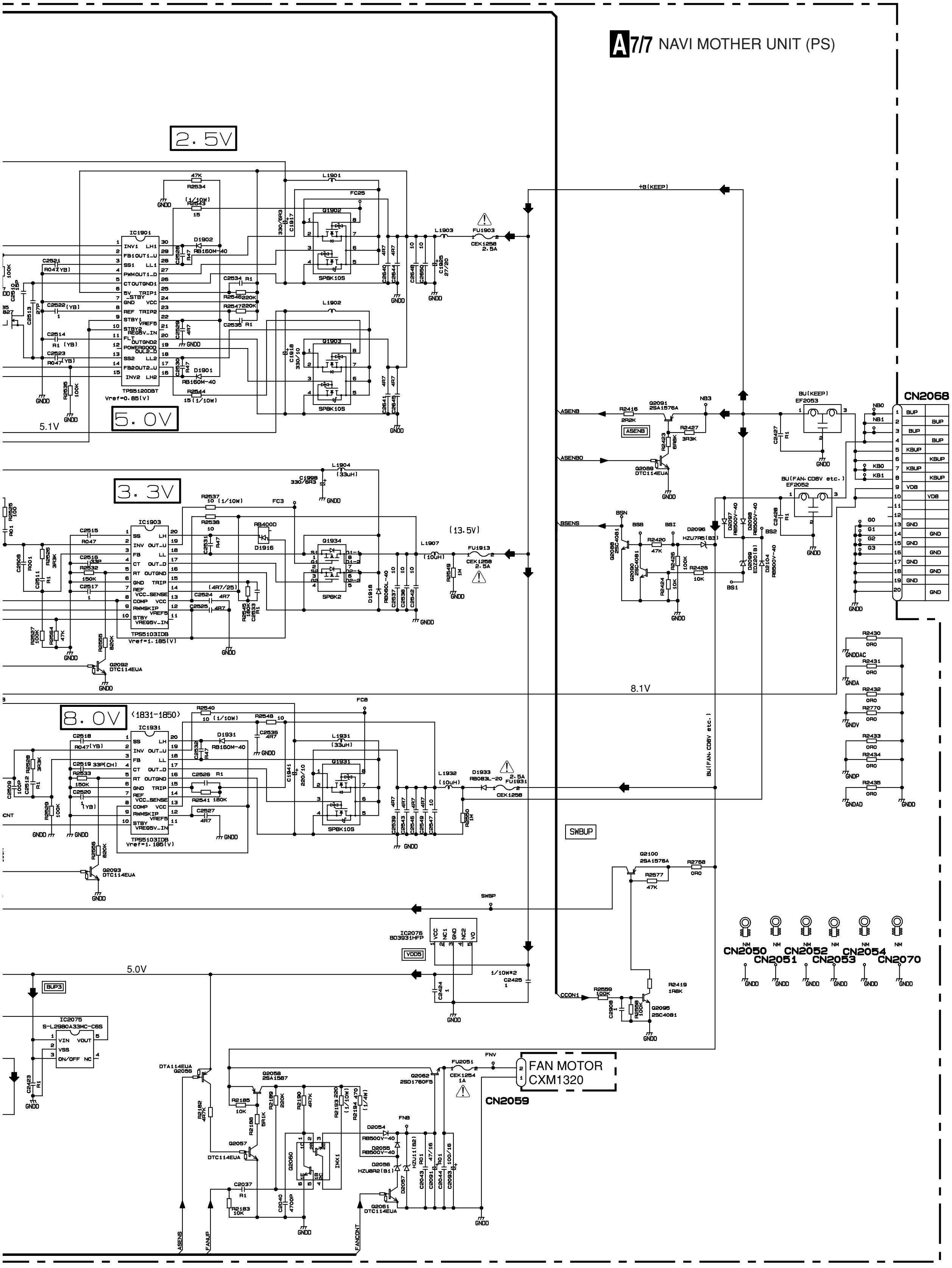
A-b
A-a

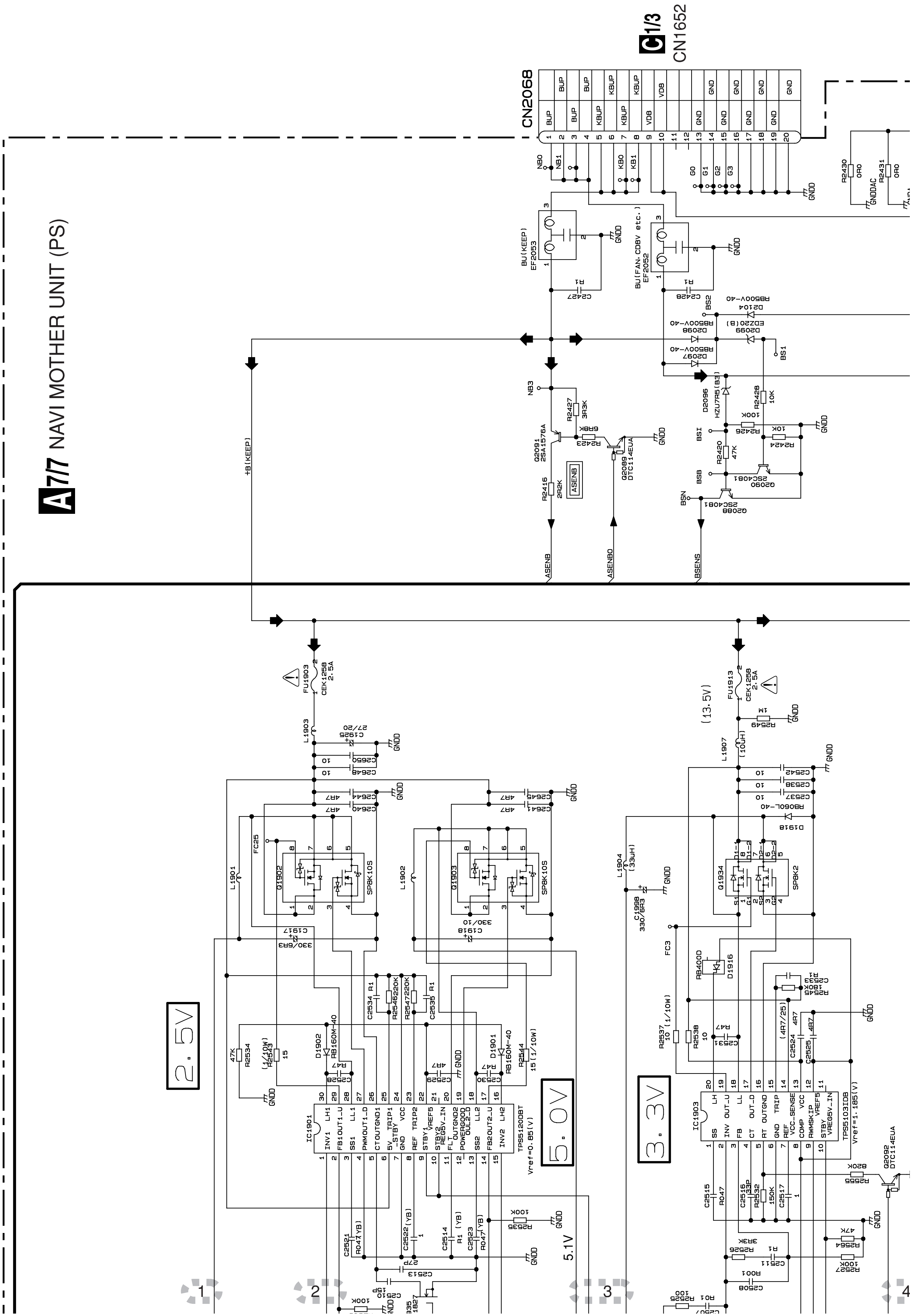
3.9 NAVI MOTHER UNIT (PS)(GUIDE PAGE)

A-a 7/7



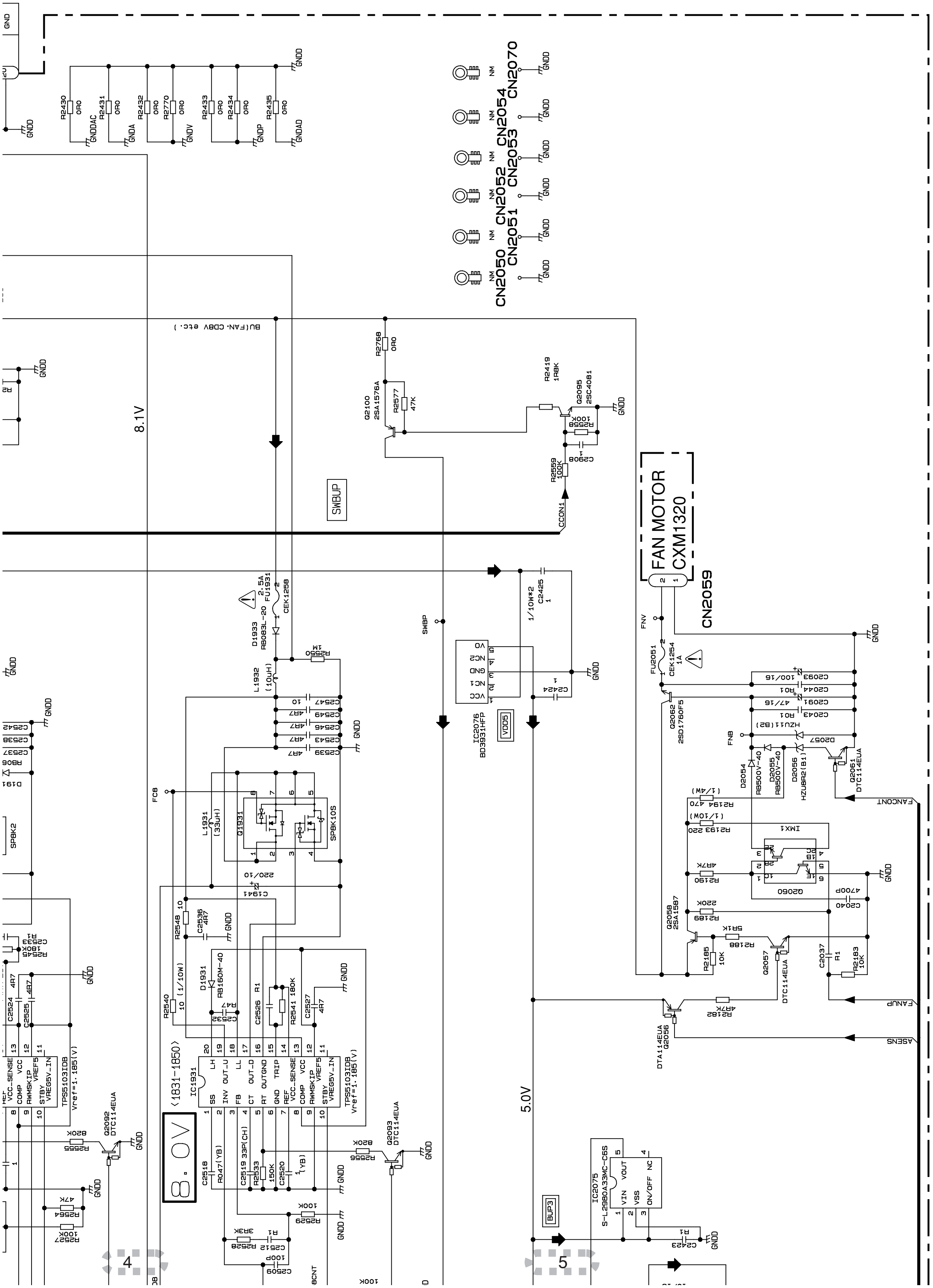
A 7/7


A 7/7 NAVI MOTHER UNIT (PS)
2.5V
5.0V
3.3V
8.0V
(1831-1850)
5.1V
8.1V
5.0V
IC1901
TPS5120DBT
Vref=0.85(V)
IC1903
TPS5103IDB
Vref=1.185(V)
IC1931
TPS5103IDB
Vref=1.185(V)
Q1902
Q1903
Q1934
Q1931
SP8K10S
SP8K2
L1901
L1902
L1903
L1904
(33uH)
L1907
(10uH)
L1931
(33uH)
L1932
(10uH)
FU1903
CEK1258
2.5A
FU1913
CEK1258
2.5A
(13.5V)
FU1931
CEK1258
2.5A
D1902
RB160M-40
D1901
RB160M-40
D1916
RB400D
D1931
RB160M-40
D1933
RB083L-20
FC25
FC3
FC8
+B(KEEP)
ASENB
ASENBO
BSENS
Q2091
2SA1576A
Q2089
DTC114EUA
Q2088
2SC4081
Q2090
2SC4081
D2096
HZU7R5(B3)
D2097
RB500V-40
D2098
RB500V-40
D2099
EDZ20(B)
D2104
RB500V-40
NB3
BS8
BSI
BSN
BS1
BS2
BU(KEEP)
EF2053
BU(FAN·CDBV etc.)
EF2052
CN2068
BUP
KBUP
VDB
GND
NB0
NB1
KB0
KB1
G0
G1
G2
G3
C 1/3
CN1652
R2430
R2431
R2432
R2770
R2433
R2434
R2435
0R0
GNDDAC
GNDA
GNDV
GNDP
GNDAD
GNDD
BU(FAN·CDBV etc.)
SWBUP
Q2100
2SA1576A
R2577
47K
R2758
0R0
SWBP
Q2092
DTC114EUA
Q2093
DTC114EUA
IC2076
BD3931HFP
VCC
NC1
GND
NC2
VO
VDD5
1/10W#2
C2425
C2424
BUP3
IC2075
S-L2980A33MC-C6S
VIN
VOUT
VSS
ON/OFF
NC
R2419
1R8K
R2559
100K
CCON1
Q2095
2SC4081
CN2050
CN2051
CN2052
CN2053
CN2054
CN2070
NM
FAN MOTOR
CXM1320
CN2059
FNV
FU2051
CEK1254
1A
Q2062
2SD1760F5
Q2058
2SA1587
Q2056
DTA114EUA
Q2057
DTC114EUA
Q2060
IMX1
Q2061
DTC114EUA
D2054
RB500V-40
D2055
RB500V-40
D2056
HZU8R2(B1)
D2057
HZU11(B2)
FNB
C2037
R1
C2040
4700P
R2183
10K
R2185
10K
ASENS
FANJP
FANCONT

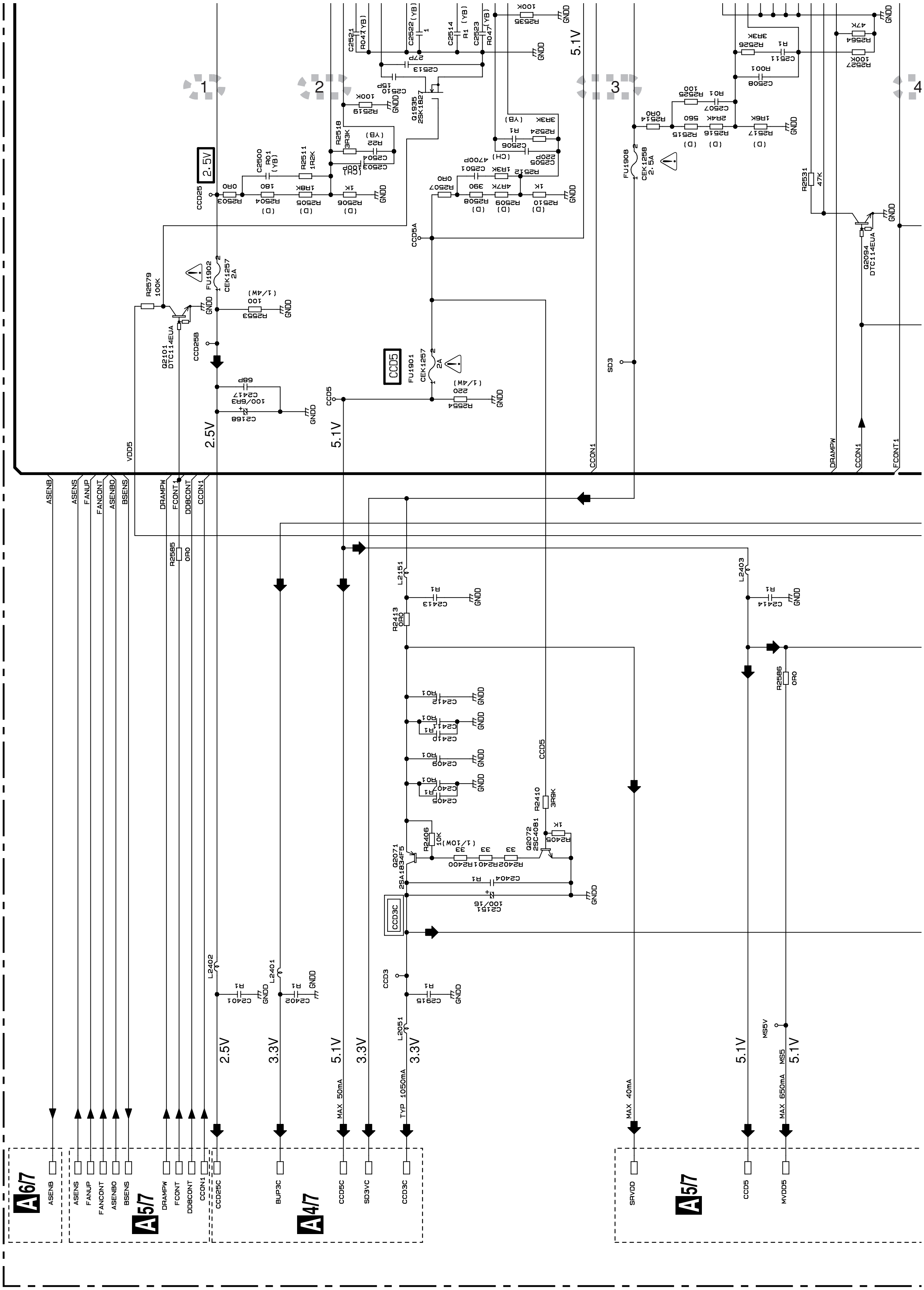

A 7/7 NAVI MOTHER UNIT (PS)
C 1/3 CN1652
CN2068
BUP
KBUP
VD8
GND
NB0 NB1 KB0 KB1 G0 G1 G2 G3
GNDD
GNDDAC
R2430 0R0
R2431 0R0
BU(KEEP) EF2053
BU(FAN, CDBV etc.) EF2052
C2427 R1
C2428 R1
BS2 BS1
D2104 RB500V-40
D2099 EDZ20(B)
D2098 RB500V-40
D2097 RB500V-40
D2096 HZU7R5(B3)
R2428 10K
R2426 100K
R2424 10K
R2420 47K
Q2090 2SC4081
Q2088 2SC4081
BSI BSB BSN
BSENS
NB3
R2427 3R3K
R2423 6R8K
Q2091 2SA1576A
Q2089 DTC114EUA
R2416 2R2K
ASENB
ASENBO
+B(KEEP)
FU1903 CEK1258 2.5A
FU1913 CEK1258 2.5A
(13.5V)
R2549 1M
L1903
C1925 27/20
C2650 10
C2648 10
C2644 4R7
C2640 4R7
C2645 4R7
C2641 4R7
L1907 (10uH)
C2542 10
C2538 10
C2537 10
D1918 RB060L-40
L1901
FC25
Q1902 SP8K10S
L1902
Q1903 SP8K10S
C1917 330/6R3
C1918 330/10
L1904 (33uH)
C1998 330/6R3
Q1934 SP8K2
FC3
D1916 RB400D
R2545 180K
C2533
2.5V
5.0V
3.3V
R2534 47K
R2543 (1/10W) 15
D1902 RB160M-40
D1901 RB160M-40
R2544 15(1/10W)
C2534 R1
R2546 220K
R2547 220K
C2535 R1
C2528 R47
C2529 4R7
C2530 R47
R2537 10 (1/10W)
R2538 10
C2531 R47
C2524 (4R7/25)
C2525 4R7
IC1901 TPS5120DBT Vref=0.85(V)
INV1 FB1 OUT1_U SS1 PWMOUT1_D CTOUTGND1 5V STBY GND REF STBY1 STBY2 FLT SS2 FB2 INV2 LH1 LL1 OUT1_D TRIP1 VCC TRIP2 VREF5 REG5V_IN POWERGOOD OUTGND2 OUT2_D LL2 OUT2_U LH2
IC1903 TPS5103IDB Vref=1.185(V)
SS INV FB CT RT GND REF COMP RWMSKIP STBY LH OUT_U LL OUT_D OUTGND TRIP VCC_SENSE VCC VREF5 REG5V_IN
C2521 R047(YB)
C2522 (YB) 1
C2514 R1 (YB)
C2523 (YB) R047
R2535 100K
C2513 27P
C2510 15P
R2533 100K
1827
5.1V
C2515 R047
C2516 33P
R2532 150K
C2517 1
R2555 820K
Q2092 DTC114EUA
R2526 3R3K
C2511 R1
C2508 R001
R2564 47K
R2527 100K
R2525 100
R01
1 2 3 4

A-b 7/7

A-a A-b

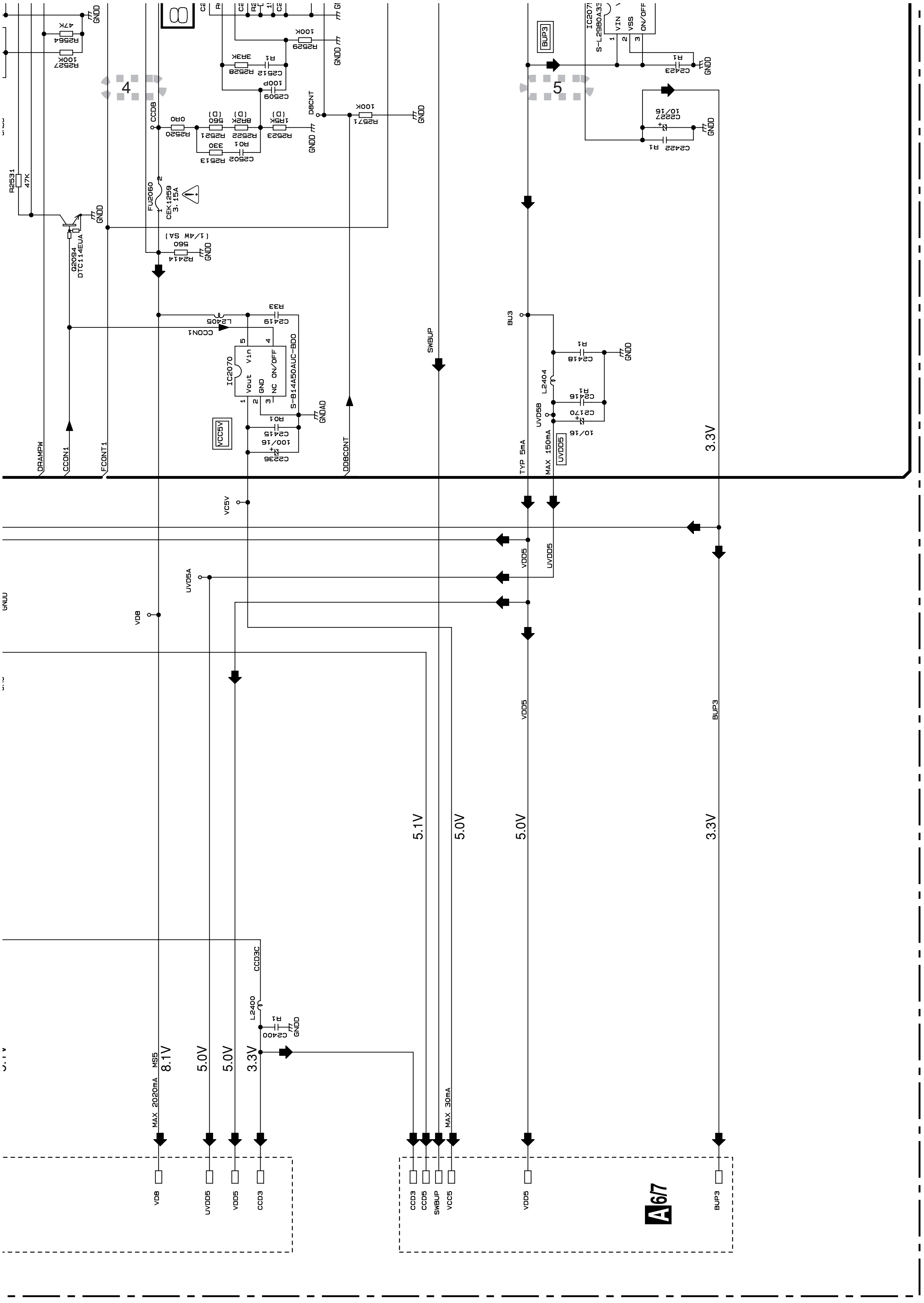

FAN MOTOR
CXM1320
CN2059
CN2050
CN2051
CN2052
CN2053
CN2054
CN2070
NM
GNDD
GNDDAC
GNDA
GNDV
GNDP
GNDAD
R2430
R2431
R2432
R2770
R2433
R2434
R2435
0R0
8.1V
5.0V
BU(FAN, CDBV etc.)
SWBUP
SWBP
CCON1
FCB
FNV
FNB
FANCONT
FANUP
ASENS
Q2100
2SA1576A
Q2095
2SC4081
R2768
R2577
47K
R2419
1R8K
R2558
100K
R2559
C2908
FU1931
2.5A
CEK1258
D1933
RB083L-20
FU2051
CEK1254
1A
L1932
(10uH)
L1931
(33uH)
Q1931
SP8K10S
SP8K2
C1941
220/10
IC1931
(1831-1850)
TPS5103IDB
Vref=1.185(V)
8.0V
D1931
RB160M-40
IC2076
BD3931HFP
VDD5
VO
NC2
GND
NC1
VCC
C2425
1/10W*2
C2424
IC2075
S-L2980A33MC-C6S
VIN
VSS
ON/OFF
VOUT
NC
BUP3
Q2062
2SD1760F5
Q2056
DTA114EUA
Q2057
DTC114EUA
Q2058
2SA1587
Q2060
IMX1
Q2061
DTC114EUA
Q2092
DTC114EUA
Q2093
DTC114EUA
D2054
RB500V-40
D2055
RB500V-40
D2056
HZU8R2(B1)
D2057
HZU11(B2)
C2093
100/16
C2044
C2091
47/16
C2043
C2040
4700P
R2194
470
R2193
220
R2190
4R7K
R2189
220K
R2188
5R1K
R2185
10K
R2183
10K
R2182
4R7K
C2037
4

A-b 7/7



A-b
A-a

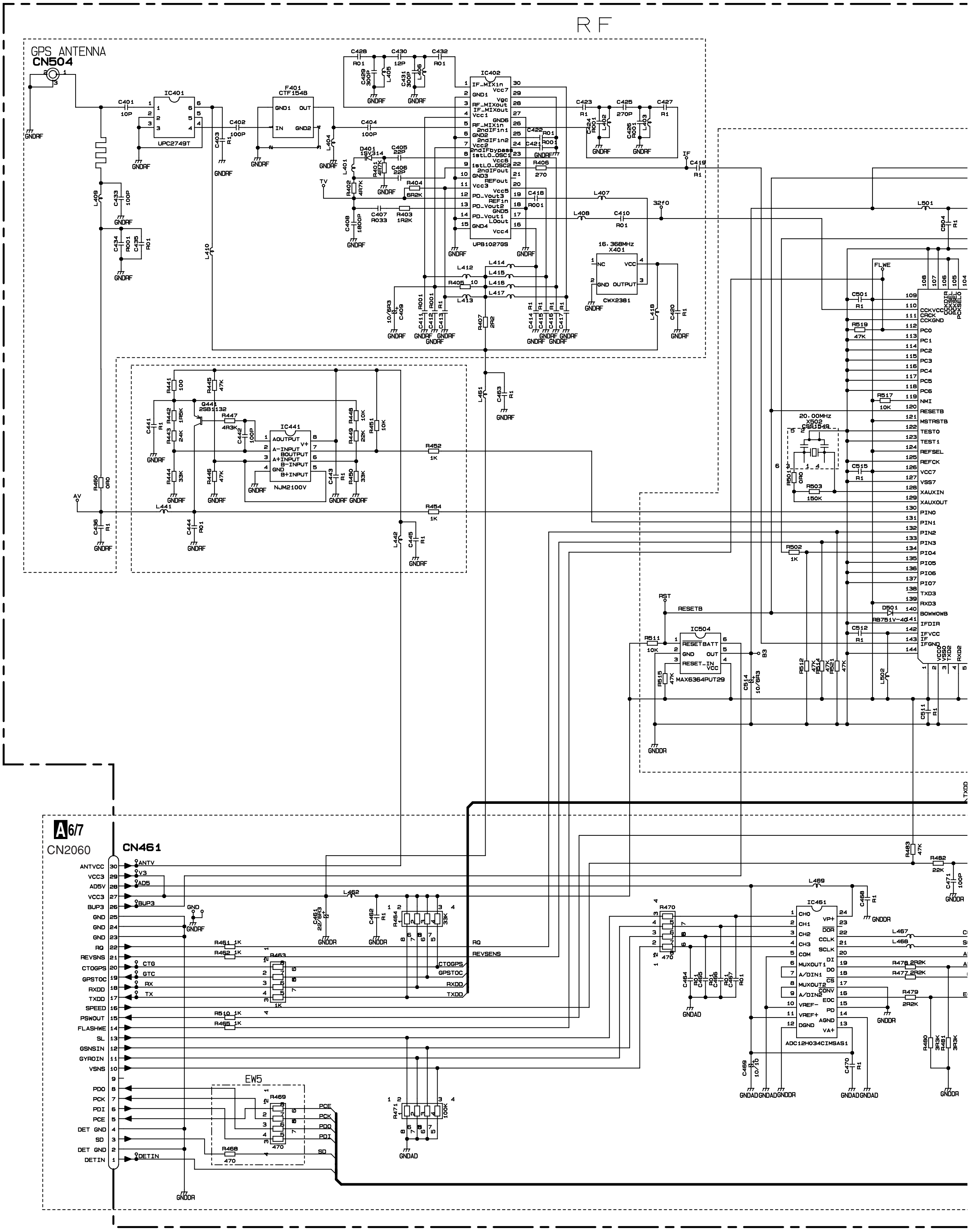
A-a 7/7



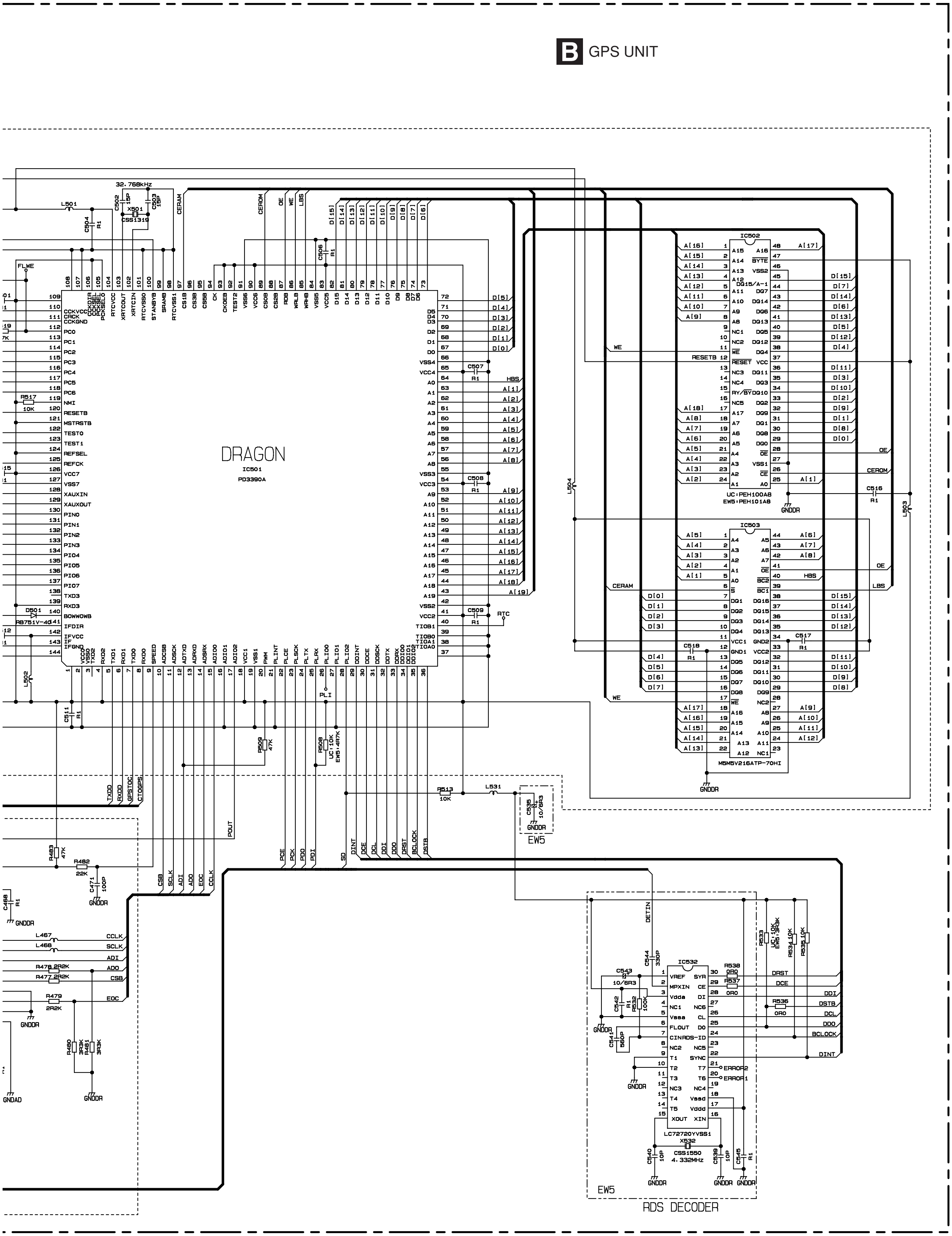
A-b 7/7
R2564 47K
R2527 100K
GNDD
R2531 47K
Q2094 DTC114EUA
4
CCDB
FU2060 CEK1259 3.15A
R2414 560 (1/4W SA)
R2520 0R0
R2521 560 (D)
R2522 8R2K (D)
R2523 1R5K (D)
R2513 330
C2502 R01
R2528 3R3K
C2512 R1
C2509 100P
R2529 100K
DBCNT
R2571 100K
L2405
C2419 R33
CCON1
IC2070 S-814A50AUC-BDO
Vout Vin GND NC ON/OFF
C2415 R01
C2236 100/16
GNDAD
VCC5V
DRAMPW
CCON1
FCONT1
DDBCONT
SWBUP
BUP3
5
IC2071 S-L2980A33
VIN VSS ON/OFF
C2423 R1
C2227 10/16
C2422 R1
BU3
C2418 R1
L2404
C2416 R1
C2170 10/16
UVD5B
TYP 5mA
MAX 150mA
UVDD5
3.3V
VC5V
VDD5
UVDD5
UVD5A
VD8
VDD5
BUP3
5.1V
5.0V
5.0V
3.3V
CCD3C
L2400
C2400 R1
MAX 2020mA MS5
8.1V
5.0V
5.0V
3.3V
MAX 30mA
VD8
UVDD5
VDD5
CCD3
CCD3
CCD5
SWBUP
VCC5
VDD5
BUP3
A 6/7
A-b
A-a
A
B
C
D
E
F
A-a 7/7

3.10 GPS UNIT(GUIDE PAGE)

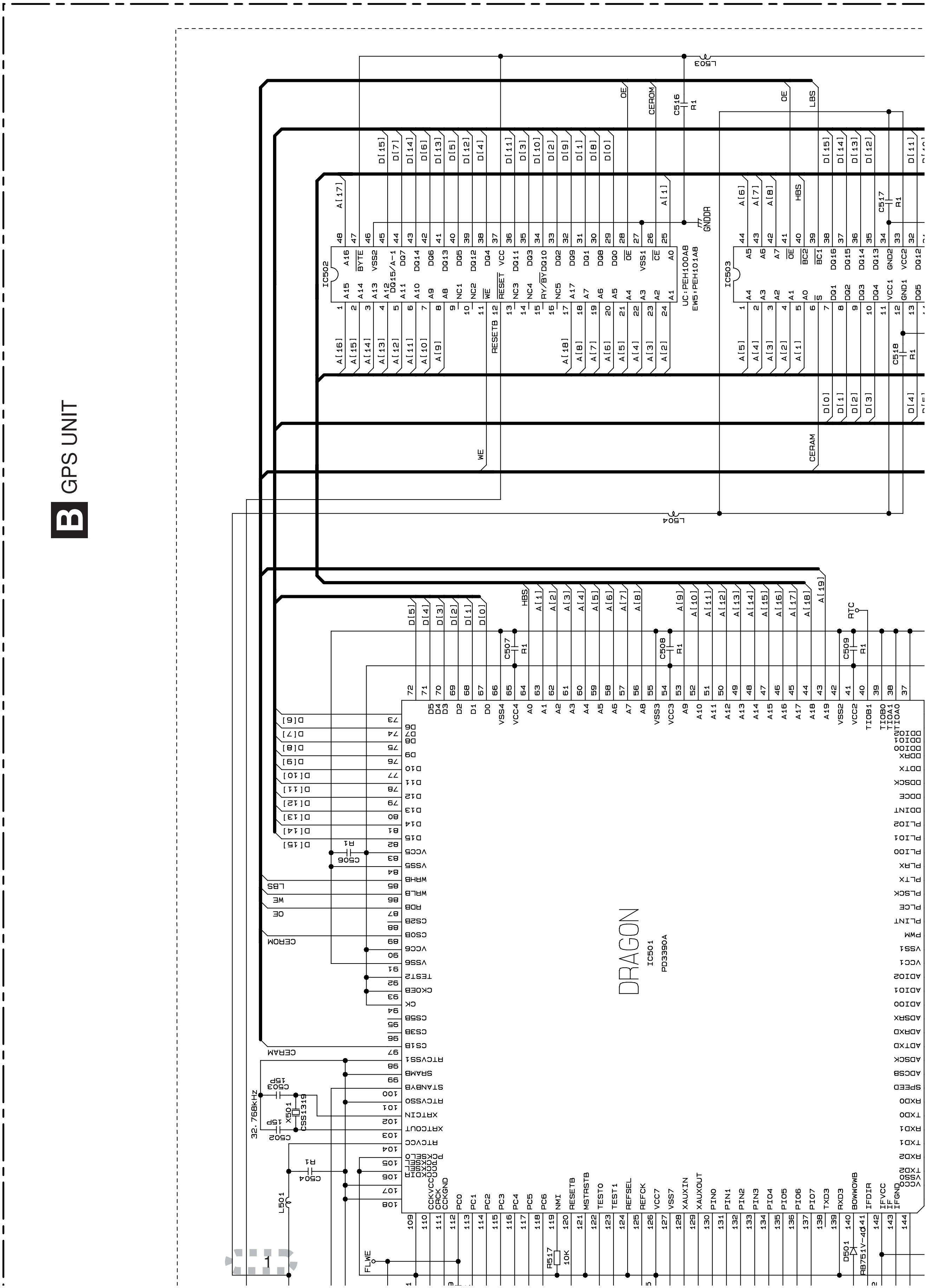
B-a



B-b

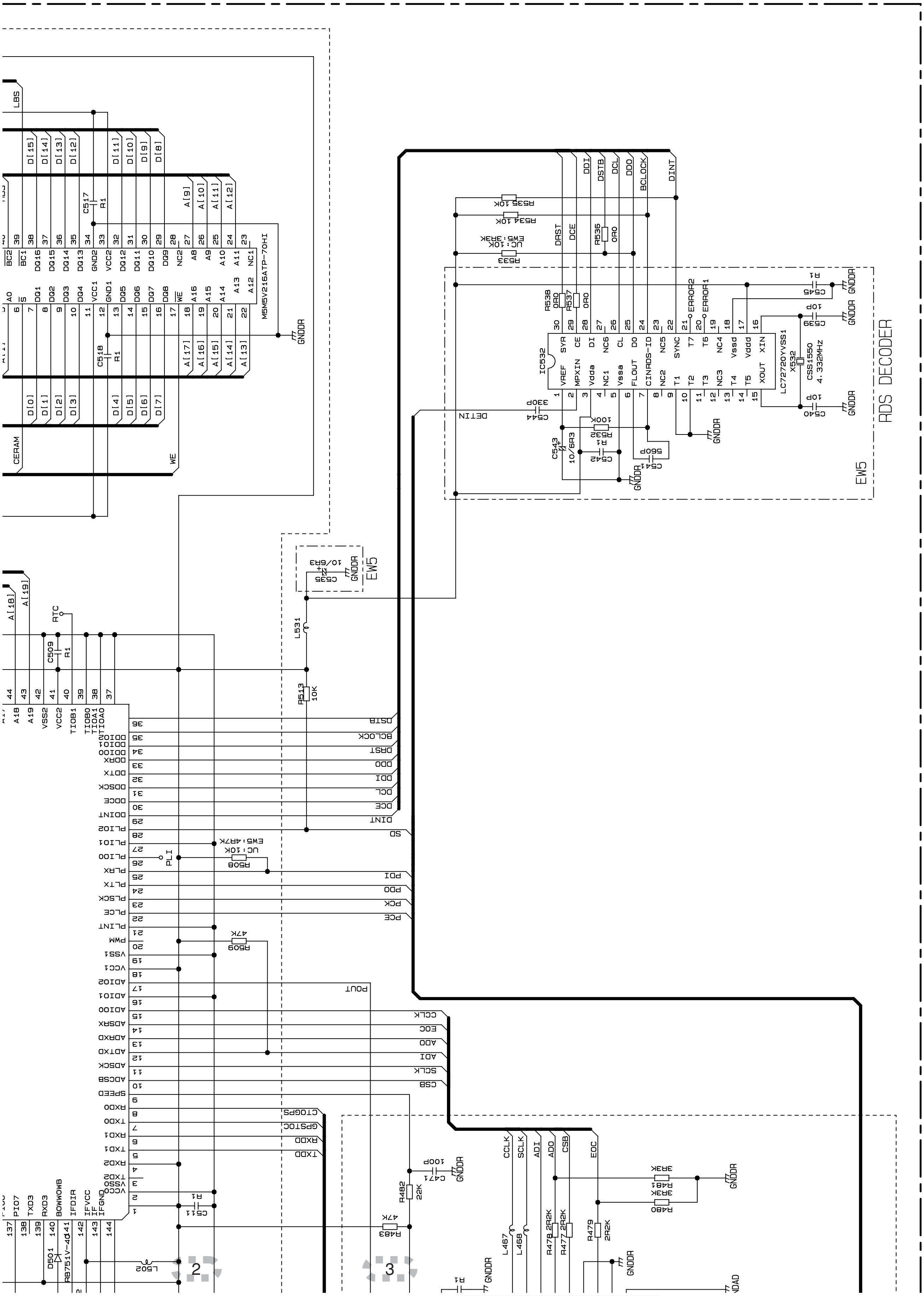

B GPS UNIT
DRAGON
IC501
PD3390A
32.768kHz
X501
CSS1319
IC502
UC:PEH100A8
EW5:PEH101A8
IC503
M5M5V216ATP-70HI
IC532
LC72720YVSS1
X532
CSS1550
4.332MHz
EW5
RDS DECODER
GNDDR
GNDAD

B GPS UNIT

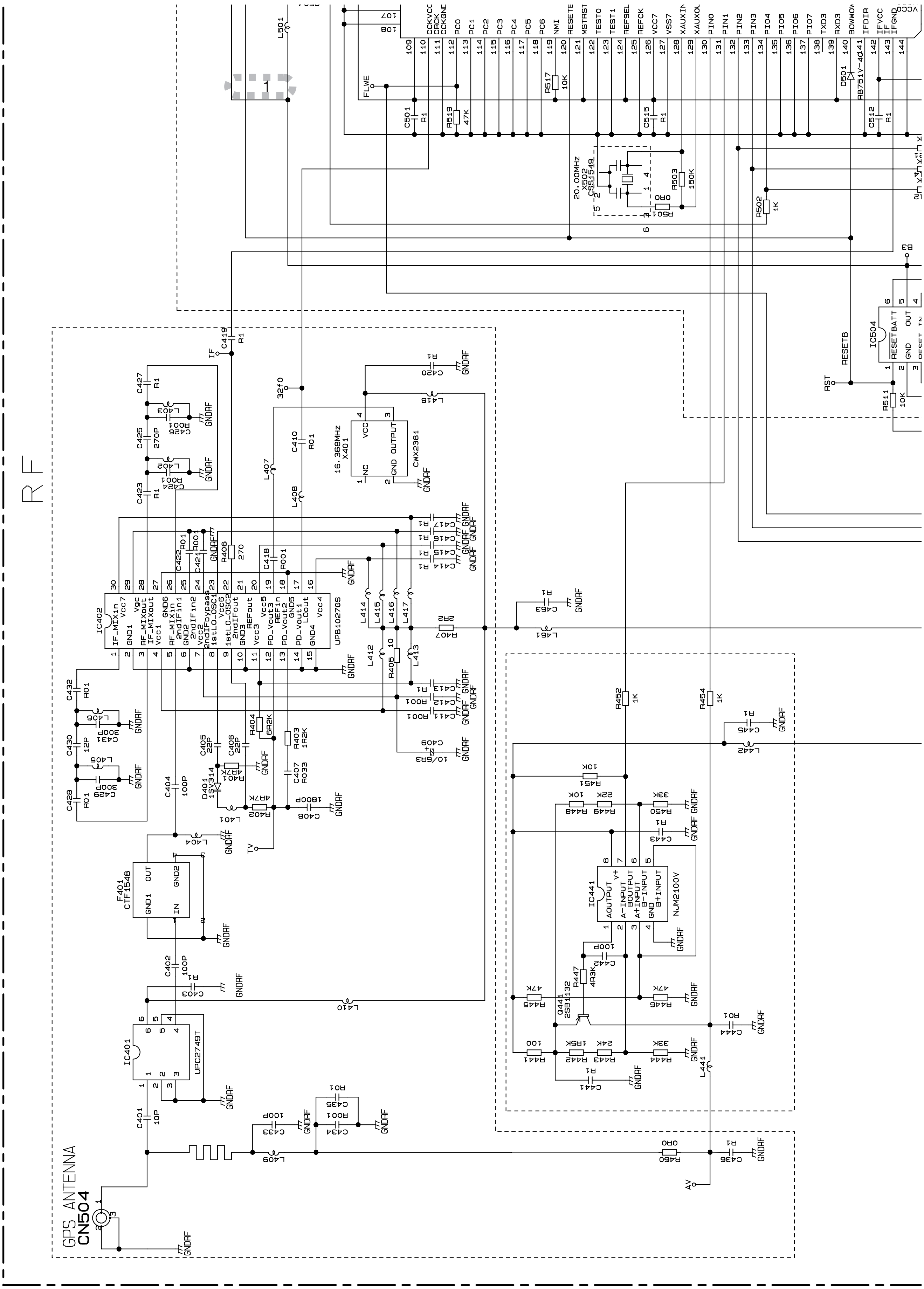

A
B
C
D
E
F
IC502
UC:PEH100AB
EW5:PEH101AB
IC503
DRAGON
IC501
PD3390A
L503
L504
L501
C516 R1
C517 R1
C518 R1
C507 R1
C508 R1
C509 R1
C506 R1
C504 R1
C503 15P
C502 15P
X501 CSS1319
32.768kHz
R517 10K
D501 RB751V-40
GNDDR
RTC
FLWE
OE
CEROM
LBS
HBS
WE
CERAM
RESETB
A16 BYTE VSS2 DQ7 DQ14 DQ6 DQ13 DQ5 DQ12 DQ4 VCC DQ11 DQ3 DQ10 DQ2 DQ9 DQ1 DQ8 DQ0 OE VSS1 CE A0
A15 A14 A13 A12 A11 A10 A9 A8 NC1 NC2 WE RESET NC3 NC4 RY/BY NC5 A17 A7 A6 A5 A4 A3 A2 A1
A5 A6 A7 OE BC2 BC1 DQ16 DQ15 DQ14 DQ13 GND2 VCC2 DQ12
A4 A3 A2 A1 A0 S DQ1 DQ2 DQ3 DQ4 VCC1 GND1 DQ5
D5 D4 D3 D2 D1 D0 VSS4 VCC4 A0 A1 A2 A3 A4 A5 A6 A7 A8 VSS3 VCC3 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 VSS2 VCC2 TIOB1 TIOB0 TIOA1 NTIOA0
D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 VCC5 VSS5 WRHB WRLB RDB CS2B CS0B VCC6 VSS6 TEST2 CKOEB CK CS5B CS3B CS1B RTCVSS1 SRAMB STANBYB RTCVSSO XRTCIN XRTCOUT RTCVCC PCKSEL0 PCKSEL1 PCCKDIR
CCKVCC CRCK CKGND PC0 PC1 PC2 PC3 PC4 PC5 PC6 NMI RESETB MSTRSTB TEST0 TEST1 REFSEL REFCK VCC7 VSS7 XAUXIN XAUXOUT PIN0 PIN1 PIN2 PIN3 PIO4 PIO5 PIO6 PIO7 TXD3 RXD3 BOWWOWB IFDIR IFVCC IFGND
DDIO1 DDIO0 DDRX DDTX DDSCK DDCE DDINT PLIO2 PLIO1 PLIO0 PLRX PLTX PLSCK PLCE PLINT PWM VSS1 VCC1 ADIO2 ADIO1 ADIO0 ADSRX ADRXD ADTXD ADSCK ADCSB SPEED RXD0 TXD0 RXD1 TXD1 RXD2 TXD2 VSS0 VCC0

B-a B-b

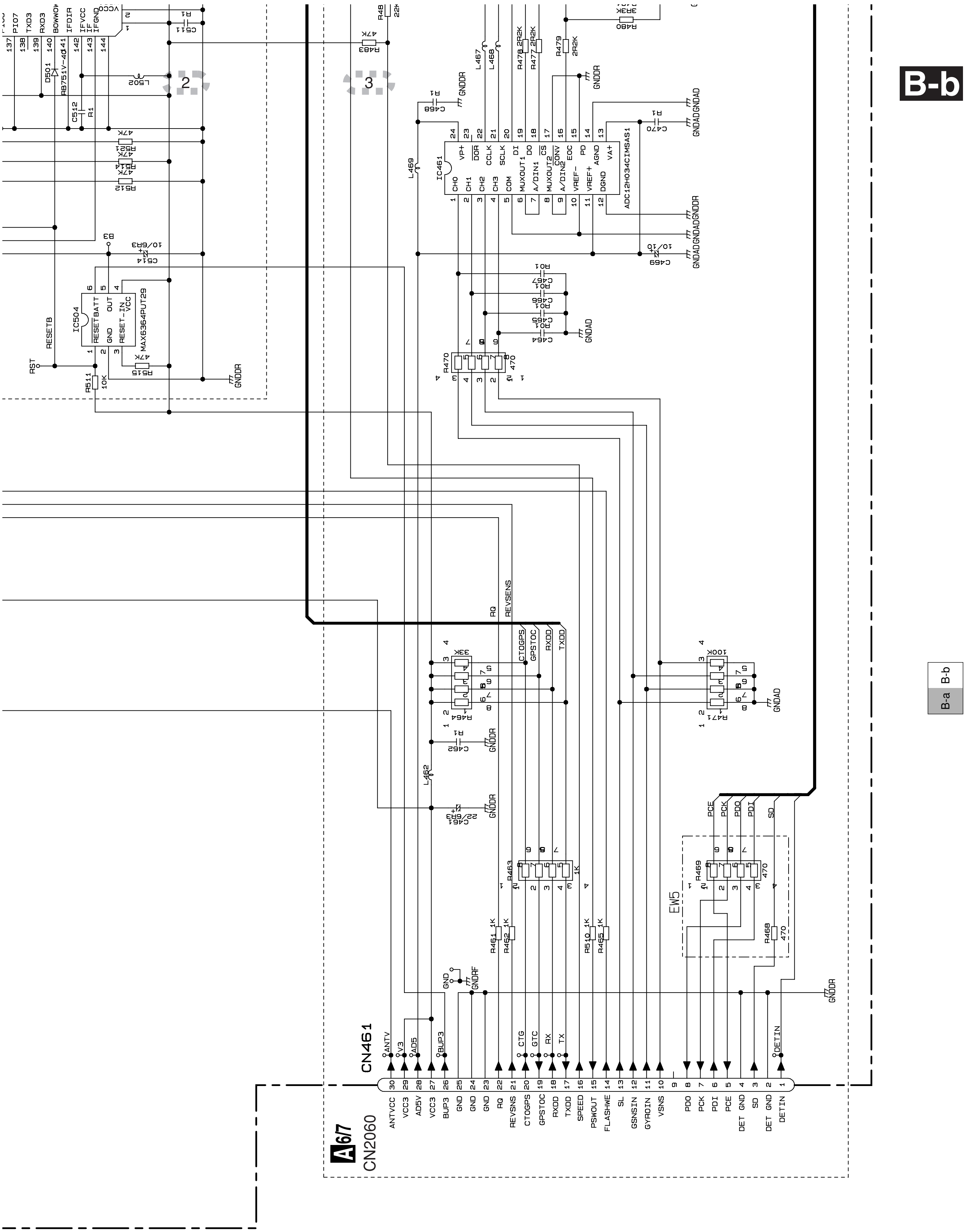
B-b


RDS DECODER
EW5
IC532
LC72720YVSS1
X532
CSS1550
4.332MHz
M5M5V216ATP-70HI
DSTB
BCLOCK
DRST
DDO
DDI
DCL
DCE
DINT
SD
PDI
PDO
PCK
PCE
POUT
CCLK
EOC
ADO
ADI
SCLK
CSB
CTOGPS
GPSTOC
RXDD
TXDD
DETIN
LBS
CERAM
WE
RTC
PLI
GNDDR
R535 10K
R534 10K
R533 UC:10K EW5:3R3K
R536 0R0
R537 0R0
R538 0R0
C545 R1
C539 10P
C540 10P
C544 330P
R532 100K
C542 R1
C541 560P
C543 10/6R3
C535 10/6R3
L531
R513 10K
R508 UC:10K EW5:4R7K
R509 47K
R482 22K
C471 100P
R483 47K
R480 3R3K
R481 3R3K
R479 2R2K
R476 2R2K
R477 2R2K
L467
L468
C509 R1
C517 R1
C518 R1
C511 R1
L502
D501 RB751V-40

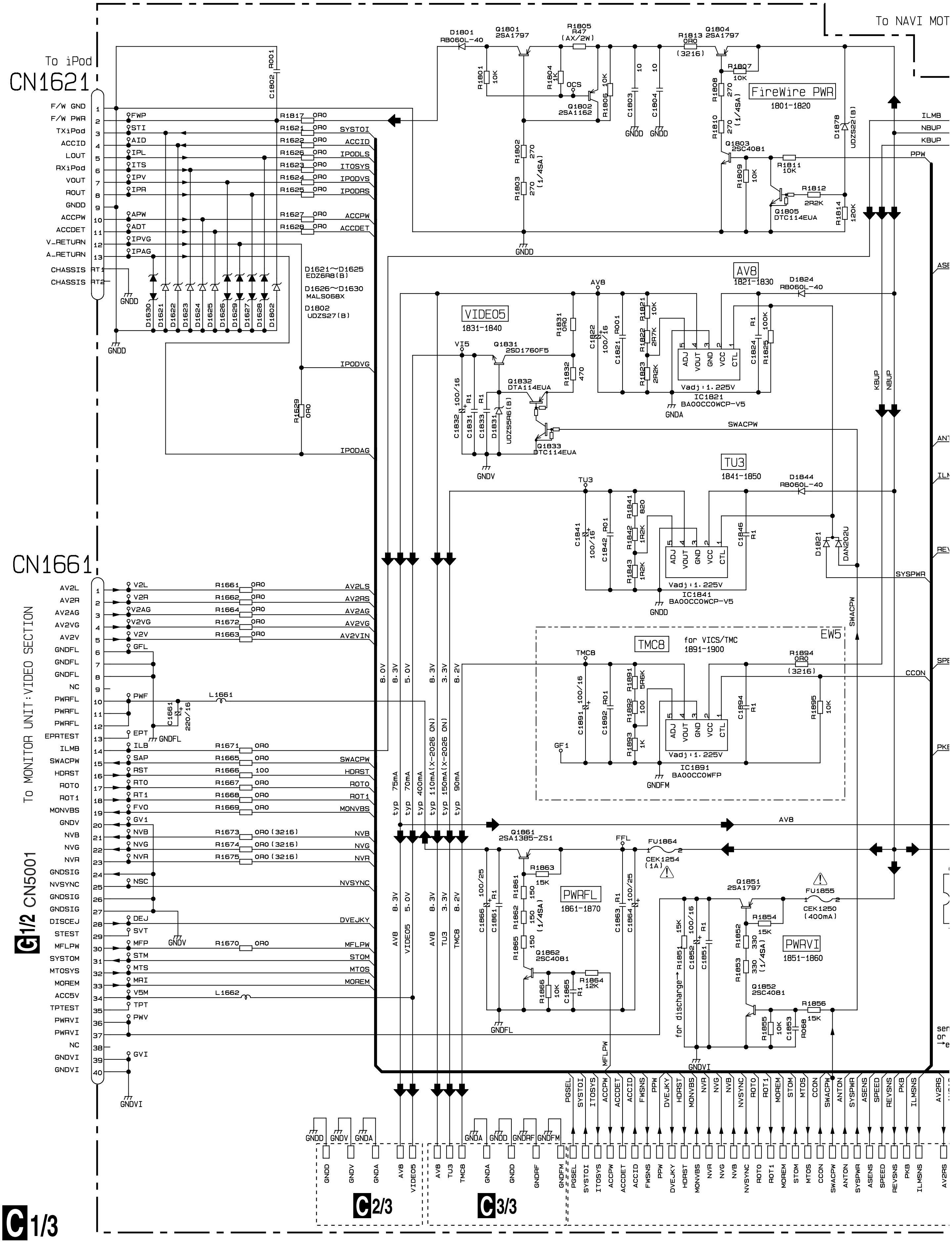
B-b


1
2
3
4
A
B
C
D
E
F
RF
GPS ANTENNA
CN504
IC402
UPB1027GS
IF_MIXin
Vcc7
GND1
Vgc
RF_MIXout
IF_MIXout
Vcc1
GND6
RF_MIXin
2ndIFin1
2ndIFin2
GND2
Vcc2
2ndIFbypass
1stLO_OSC1
1stLO_OSC2
Vcc6
2ndIFout
GND3
REFout
Vcc3
Vcc5
PD_Vout3
PD_Vout2
PD_Vout1
REFin
GND5
LOout
GND4
Vcc4
IC401
UPC2749T
F401
CTF1548
GND1
IN
OUT
GND2
X401
16.368MHz
CWX2381
VCC
GND
OUTPUT
NC
IC441
NJM2100V
AOUTPUT
A-INPUT
A+INPUT
GND
V+
BOUTPUT
B-INPUT
B+INPUT
Q441
2SB1132
IC504
RESET
BATT
GND
OUT
RESETB
RST
R511
10K
X502
20.00MHz
CSS1549
R503
150K
R501
0R0
R502
1K
R517
10K
R519
47K
C501
R1
C515
C512
D501
RB751V-40
FLWE
L501
IF
32f0
TV
AV
GNDRF
C401 10P
C402 100P
C403 R1
C404 100P
C405 22P
C406 22P
C407 R033
C408 1800P
C409 10/6R3
C410 R01
C411 R001
C412 R001
C413 R1
C414 R1
C415 R1
C416 R1
C417 R1
C418 R001
C419 R1
C420 R1
C421 R001
C422 R01
C423 R1
C424 R001
C425 270P
C426 R001
C427 R1
C428 R01
C429 300P
C430 12P
C431 300P
C432 R01
C433 100P
C434 R001
C435 R01
C436 R1
C441 R1
C442 100P
C443 R1
C444 R01
C445 R1
C463 R1
D401 1SV314
L401
L402
L403
L404
L405
L406
L407
L408
L409
L410
L412
L413
L414
L415
L416
L417
L418
L441
L442
L461
R401 4R7K
R402 4R7K
R403 1R2K
R404 6R2K
R405 10
R406 270
R407 2R2
R441 100
R442 1R5K
R443 24K
R444 33K
R445 47K
R446 47K
R447 4R3K
R448 10K
R449 22K
R450 33K
R451 10K
R452 1K
R454 1K
R460 0R0
107
108
109 CCKVCC
110 CRCK
111 CCKGND
112 PC0
113 PC1
114 PC2
115 PC3
116 PC4
117 PC5
118 PC6
119 NMI
120 RESETE
121 MSTRST
122 TEST0
123 TEST1
124 REFSEL
125 REFCK
126 VCC7
127 VSS7
128 XAUXIN
129 XAUXOUT
130 PIN0
131 PIN1
132 PIN2
133 PIN3
134 PIO4
135 PIO5
136 PIO6
137 PIO7
138 TXD3
139 RXD3
140 BOWWOW
141 IFDIR
142 IFVCC
143 IF
144 IFGND
VCCO
B-b
B-a

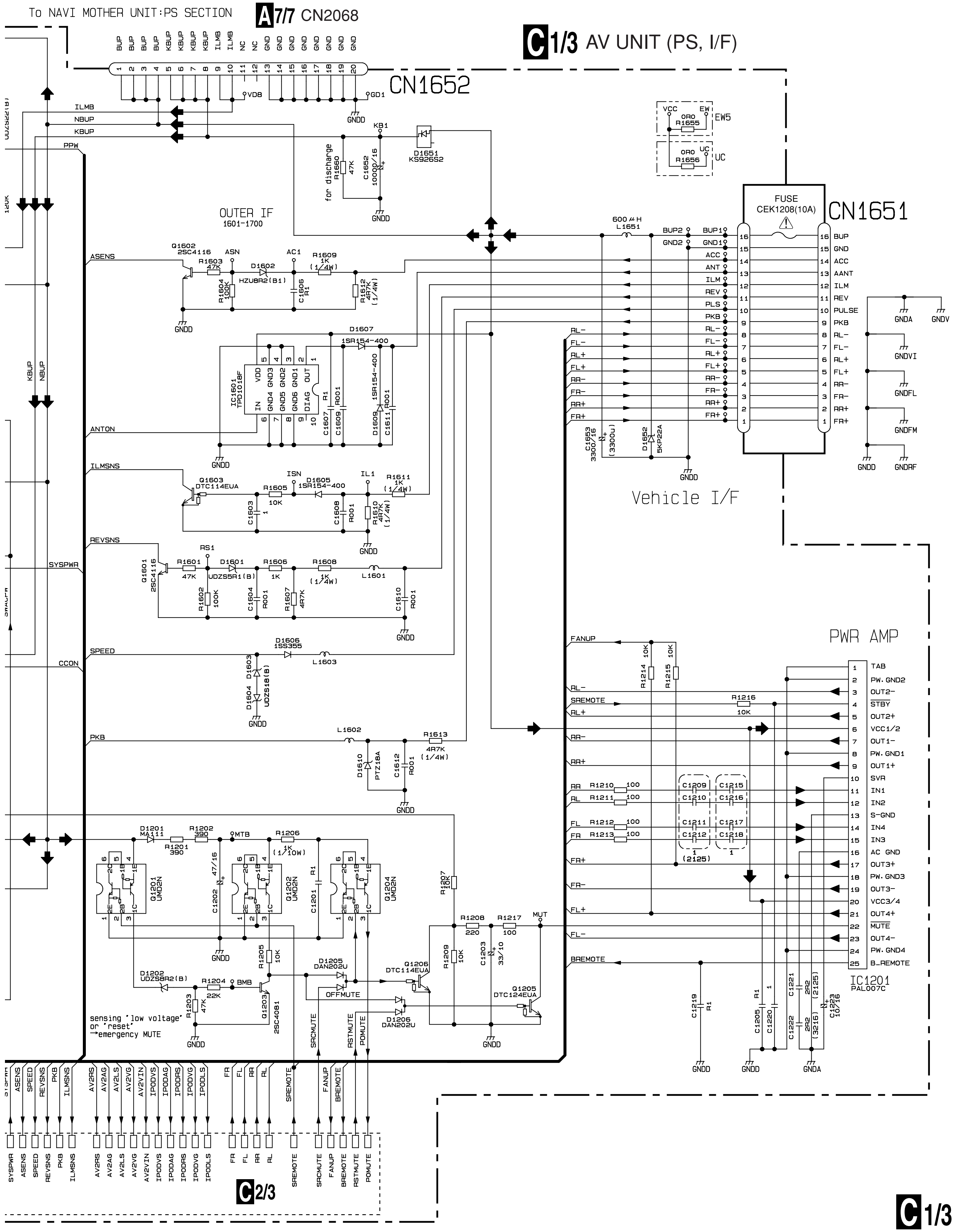
B-a


B-b
IC504
MAX6364PUT29
RESETB
RST
R511 10K
R515 47K
C514 10/6R3
B3
L502
D501 RB751V-40
C512
C511
R512 47K
R514 47K
R521 47K
GNDDR
R483 47K
R48 22K
IC461
ADC12H034CIMSAS1
L467
L468
L469
C468
R478 2R2K
R477 2R2K
R479 2R2K
R480 3R3K
C470
C469 10/10
C464
C465
C466
C467
R470 470
GNDAD
R464 33K
R471 100K
C462
L462
C461 22/6R3
R463 1K
R469 470
EW5
R461 1K
R462 1K
R510 1K
R465 1K
R468 470
RQ
REVSENS
CTOGPS
GPSTOC
RXDD
TXDD
PCE
PCK
PDO
PDI
SD
GND
GNDRF
CN461
ANTV
V3
AD5
BUP3
CTG
GTC
RX
TX
DETIN
30 ANTVCC
29 VCC3
28 AD5V
27 VCC3
26 BUP3
25 GND
24 GND
23 GND
22 RQ
21 REVSNS
20 CTOGPS
19 GPSTOC
18 RXDD
17 TXDD
16 SPEED
15 PSWOUT
14 FLASHWE
13 SL
12 GSNSIN
11 GYROIN
10 VSNS
9
8 PDO
7 PCK
6 PDI
5 PCE
4 DET GND
3 SD
2 DET GND
1 DETIN
A 6/7
CN2060
B-a
B-a B-b

3.11 AV UNIT (PS, I/F)

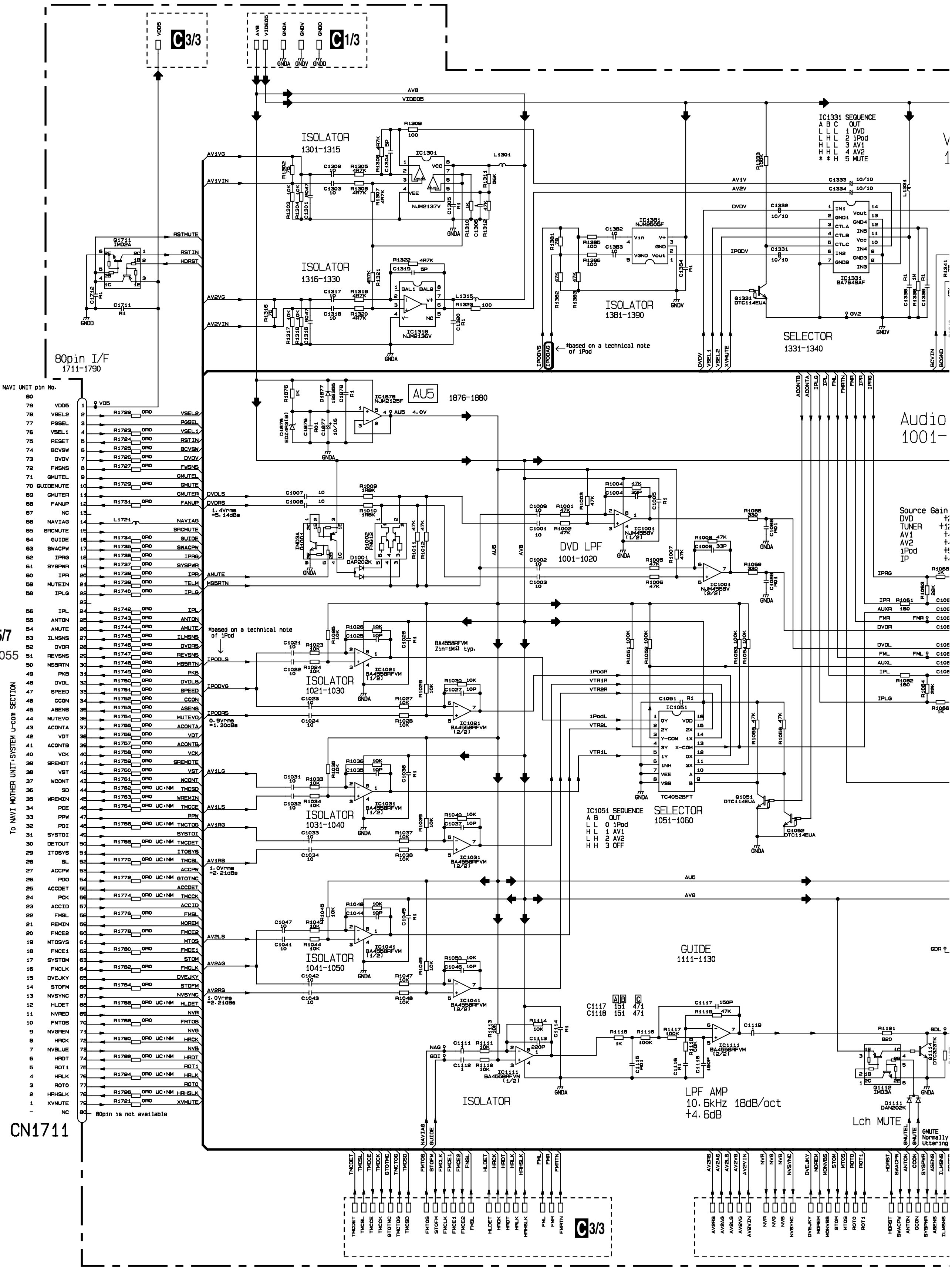


C 1/3


To NAVI MOTHER UNIT:PS SECTION
A 7/7 CN2068
C 1/3 AV UNIT (PS, I/F)
CN1652
BUP BUP BUP BUP KBUP KBUP KBUP KBUP ILMB ILMB NC NC GND GND GND GND GND GND GND GND
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
VD8
GD1
GNDD
ILMB
NBUP
KBUP
PPW
KB1
for dischange
R1660 47K
C1652 1000/16
D1651 KS926S2
VCC EW
0R0 R1655
EW5
UC
0R0 R1656
FUSE CEK1208(10A)
CN1651
OUTER IF 1601-1700
600μH L1651
BUP2 BUP1
GND2 GND1
ACC ANT ILM REV PLS PKB RL- FL- RL+ FL+ RR- FR- RR+ FR+
16 BUP
15 GND
14 ACC
13 AANT
12 ILM
11 REV
10 PULSE
9 PKB
8 RL-
7 FL-
6 RL+
5 FL+
4 RR-
3 FR-
2 RR+
1 FR+
GNDA GNDV GNDVI GNDFL GNDFM GNDD GNDRF
ASENS
Q1602 2SC4116
R1603 47K
ASN
D1602 HZU8R2(B1)
AC1
R1609 1K (1/4W)
R1604 100K
C1606 R1
R1612 4R7K (1/4W)
D1607 1SR154-400
IC1601 TPD1018F
VDD GND3 GND2 GND1 OUT IN GND4 GND5 GND6 DIAG
C1607 R1
C1609 R001
D1609 1SR154-400
C1611 R001
ANTON
C1653 3300/16 (3300u)
D1652 5KP22A
Vehicle I/F
ILMSNS
Q1603 DTC114EUA
ISN
R1605 10K
D1605 1SR154-400
IL1
R1611 1K (1/4W)
C1603 1
C1608 R001
R1610 4R7K (1/4W)
REVSNS
SYSPWR
RS1
Q1601 2SC4116
R1601 47K
D1601 UDZS5R1(B)
R1606 1K
R1608 1K (1/4W)
L1601
R1602 100K
C1604 R001
R1607 4R7K
C1610 R001
SPEED
CCON
D1606 1SS355
L1603
D1603 D1604 UDZS18(B)
PKB
L1602
R1613 4R7K (1/4W)
D1610 PTZ18A
C1612 R001
PWR AMP
FANUP
R1214 10K
R1215 10K
SREMOTE
R1216 10K
R1210 100
R1211 100
R1212 100
R1213 100
C1209 C1210 C1211 C1212 C1215 C1216 C1217 C1218
1 (2125)
1 TAB
2 PW.GND2
3 OUT2-
4 STBY
5 OUT2+
6 VCC1/2
7 OUT1-
8 PW.GND1
9 OUT1+
10 SVR
11 IN1
12 IN2
13 S-GND
14 IN4
15 IN3
16 AC GND
17 OUT3+
18 PW.GND3
19 OUT3-
20 VCC3/4
21 OUT4+
22 MUTE
23 OUT4-
24 PW.GND4
25 B_REMOTE
IC1201 PAL007C
BREMOTE
C1219 R1
C1205 R1
C1220 1
C1221 1
C1222 2R2 (3216)
2R2 (2125)
C1223 10/16
D1201 MA111
R1202 390
R1201 390
MTB
R1206 1K (1/10W)
Q1201 UMD2N
C1202 47/16
Q1202 UMD2N
C1201 R1
Q1204 UMD2N
R1207 10K
R1208 220
R1217 100
MUT
R1209 10K
C1203 33/10
D1202 UDZS8R2(B)
R1204 22K
BMB
R1203 47K
R1205 10K
Q1203 2SC4081
D1205 DAN202U
Q1206 DTC114EUA
OFFMUTE
D1206 DAN202U
Q1205 DTC124EUA
sensing "low voltage" or "reset" →emergency MUTE
SRCMUTE RSTMUTE POMUTE
SYSPWR ASENS SPEED REVSNS PKB ILMSNS AV2RS AV2AG AV2LS AV2VG AV2VIN IPODVS IPODAG IPODRS IPODVG IPODLS FR FL RR RL SREMOTE SRCMUTE FANUP BREMOTE RSTMUTE POMUTE
C 2/3
C 1/3

3.12 AV UNIT (A/V)(GUIDE PAGE)

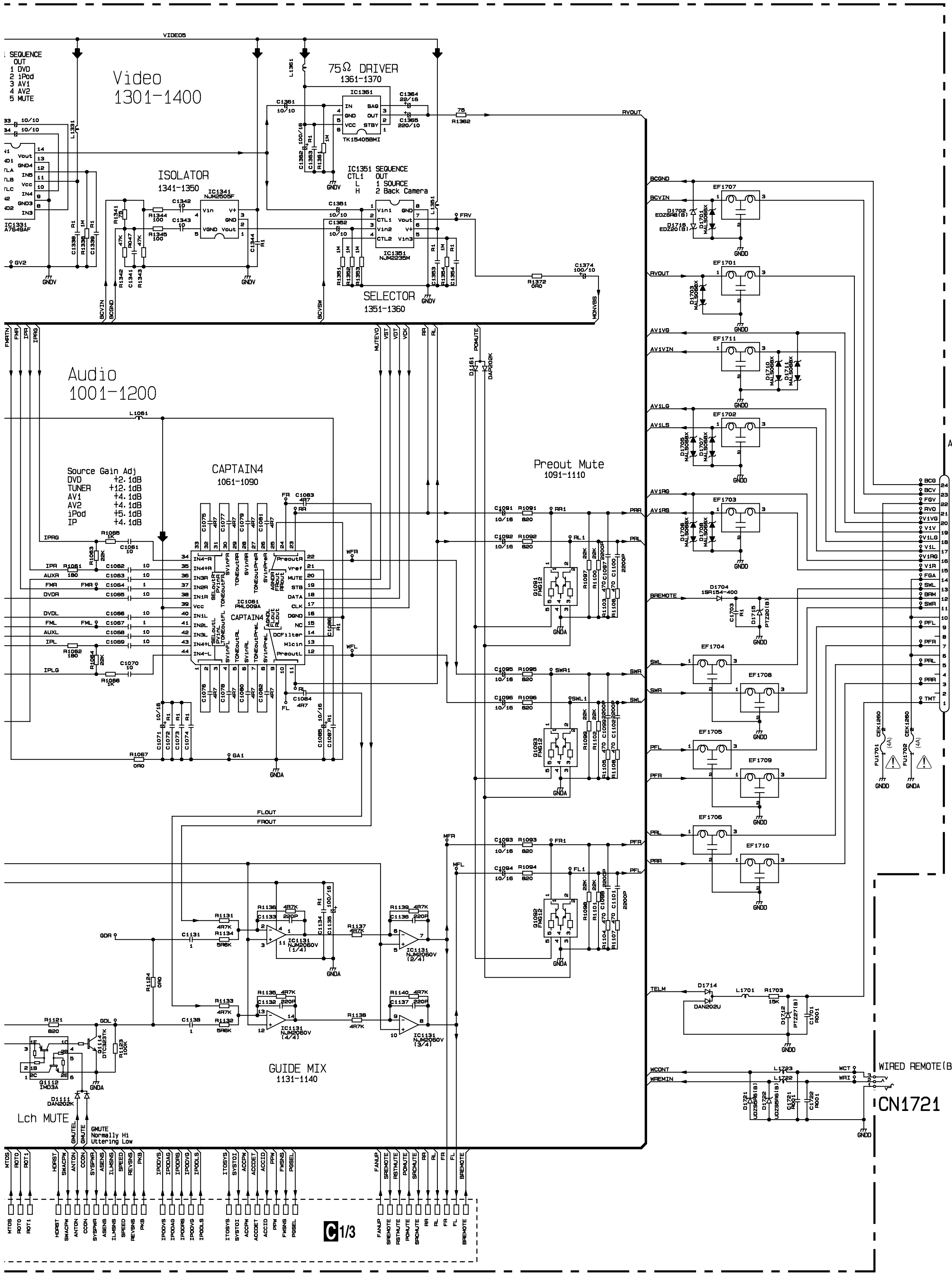
C-a 2/3



C 2/3

C-b 2/3

C 2/3 AV UNIT (A/V)



A

B

C

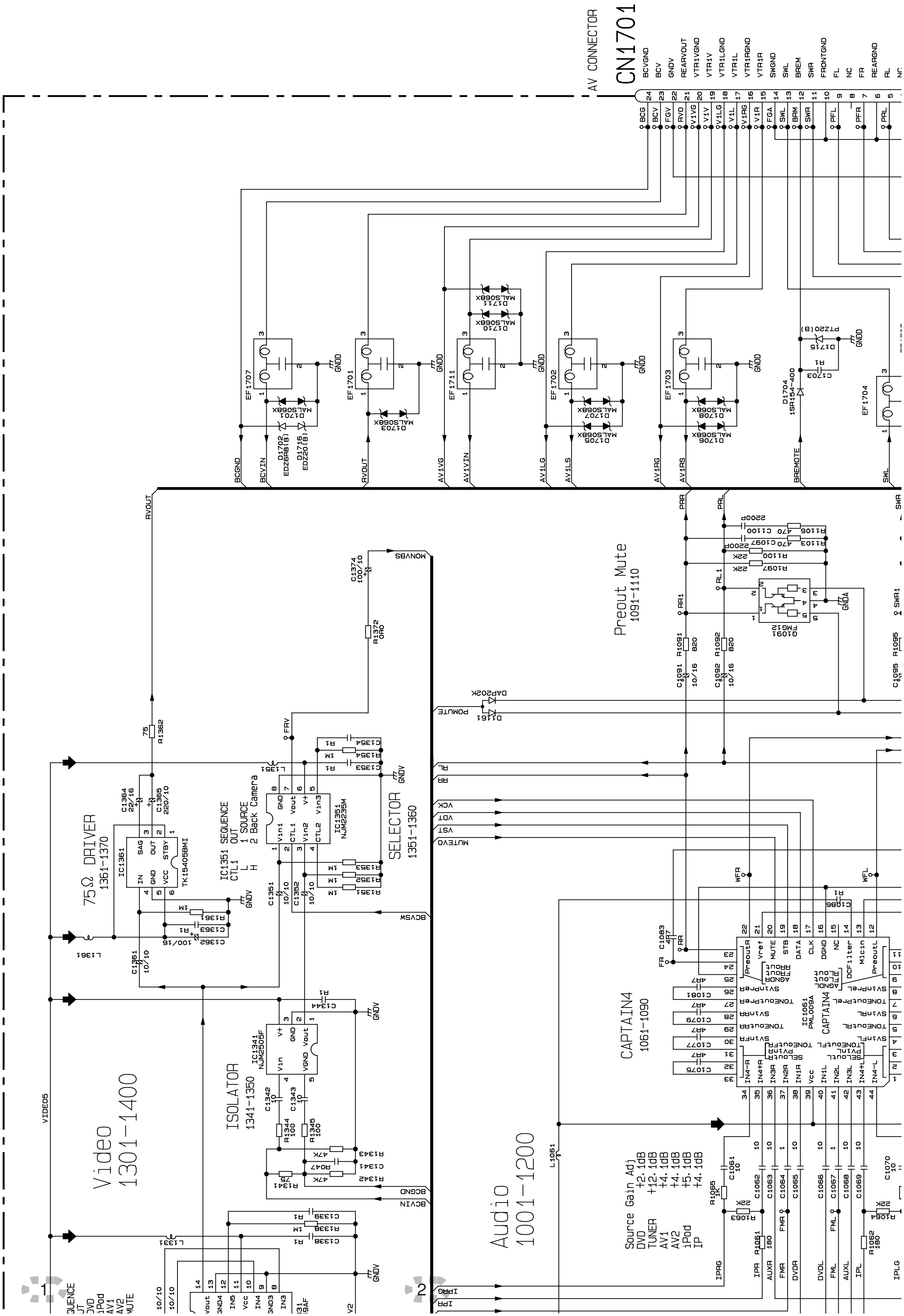
D

E

F

C 2/3 AV UNIT (A/V)

C-a C-b



A

B

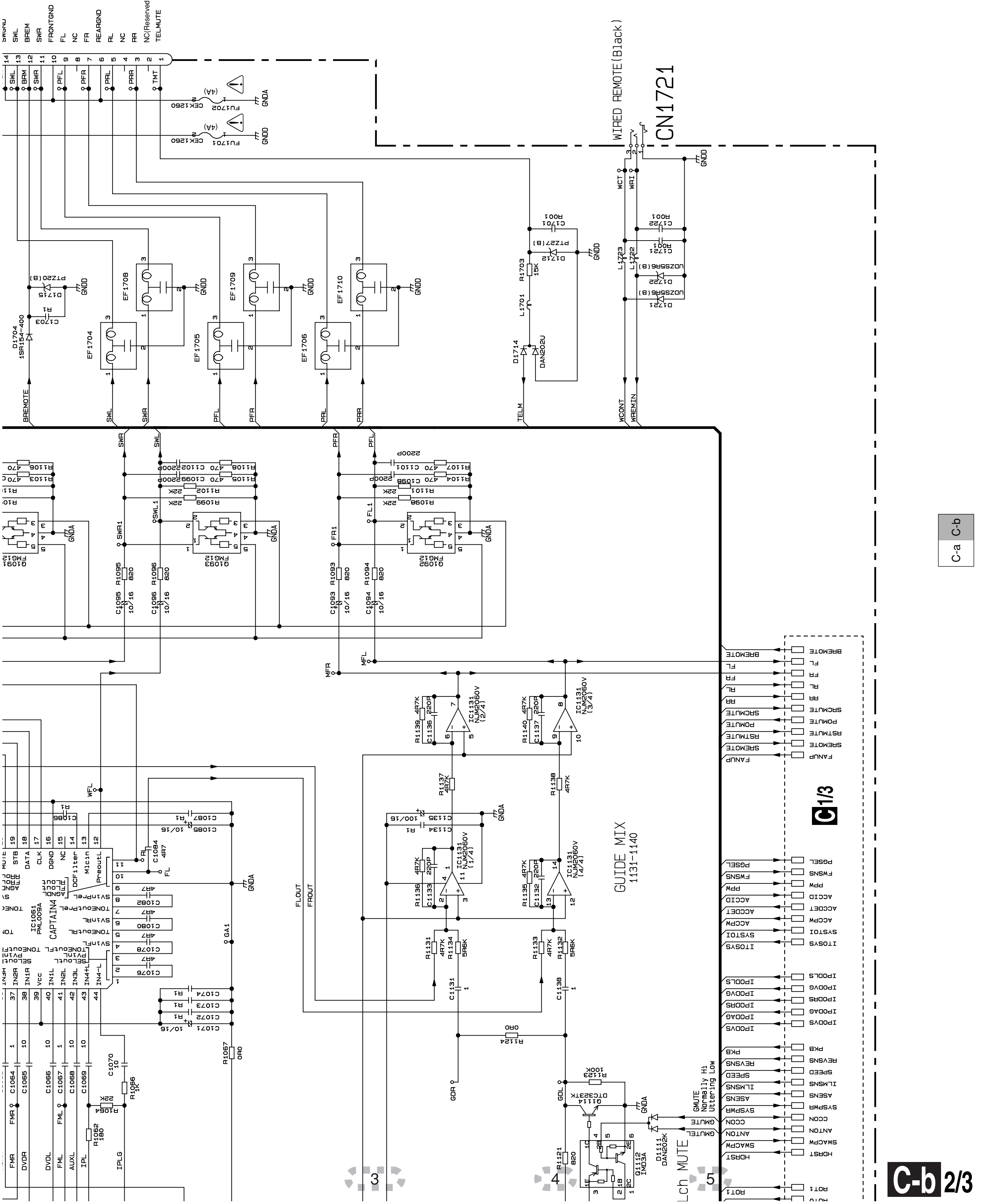
C

C-a C-b

D

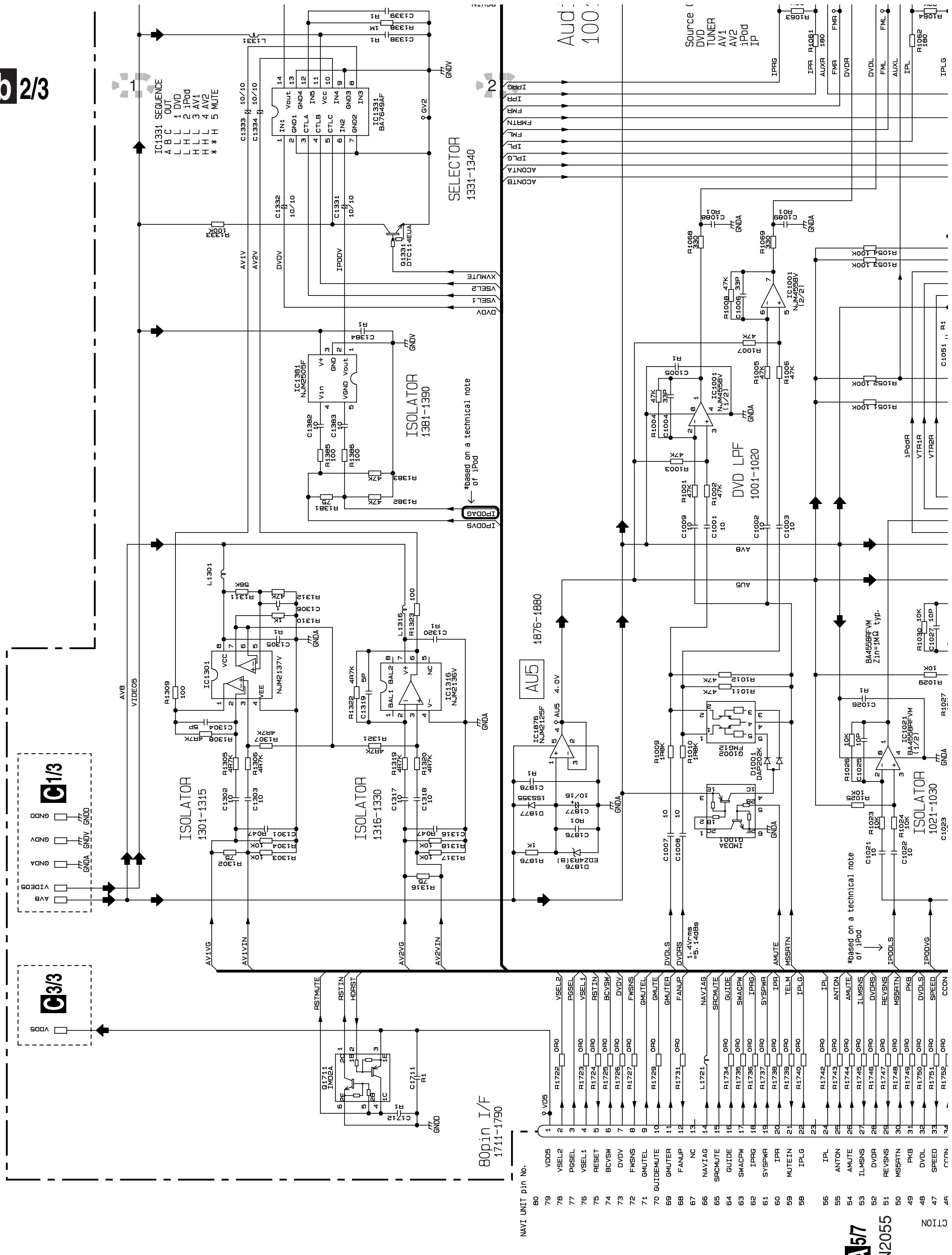
E

F



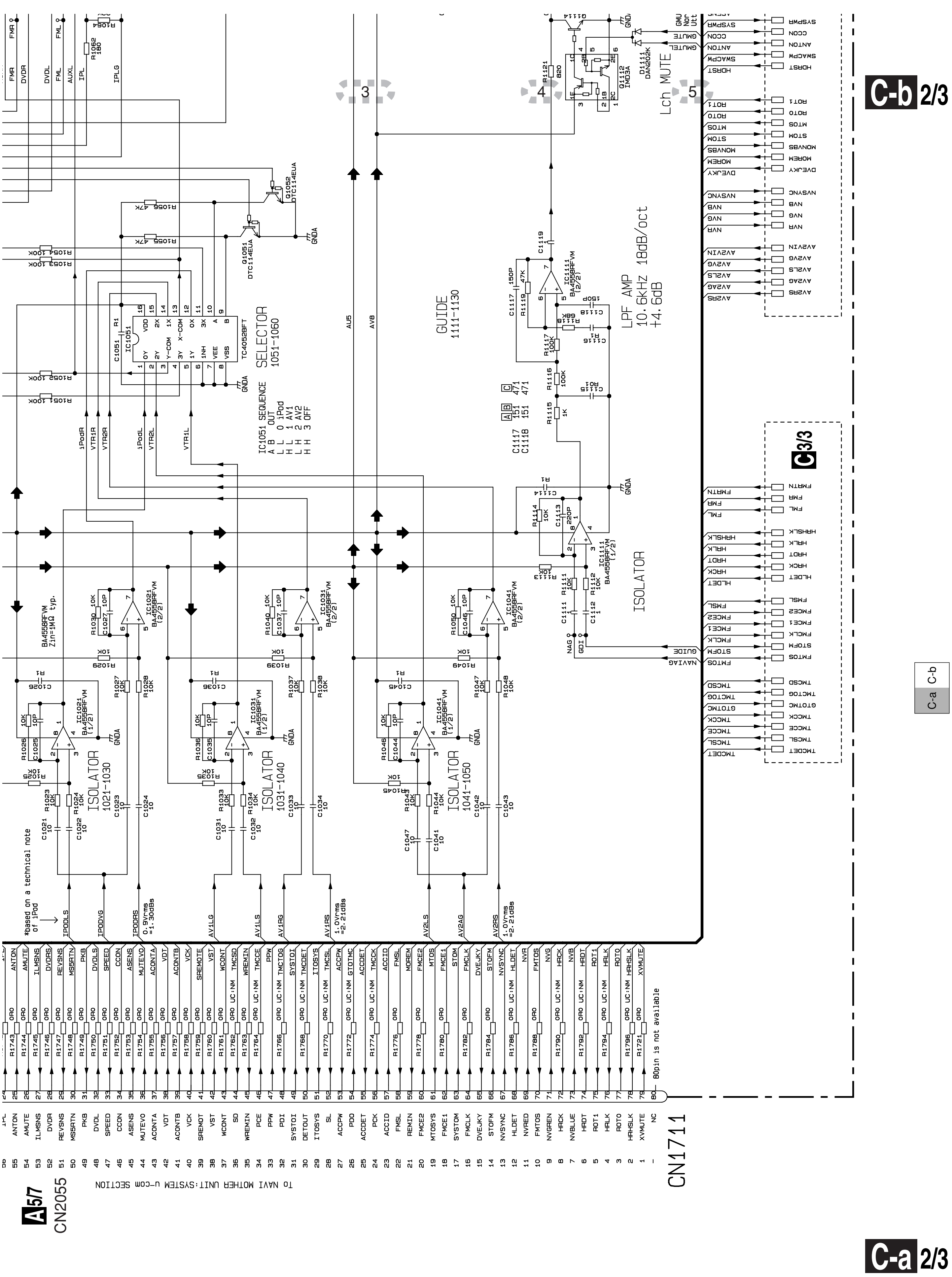
C-b 2/3

C-b 2/3

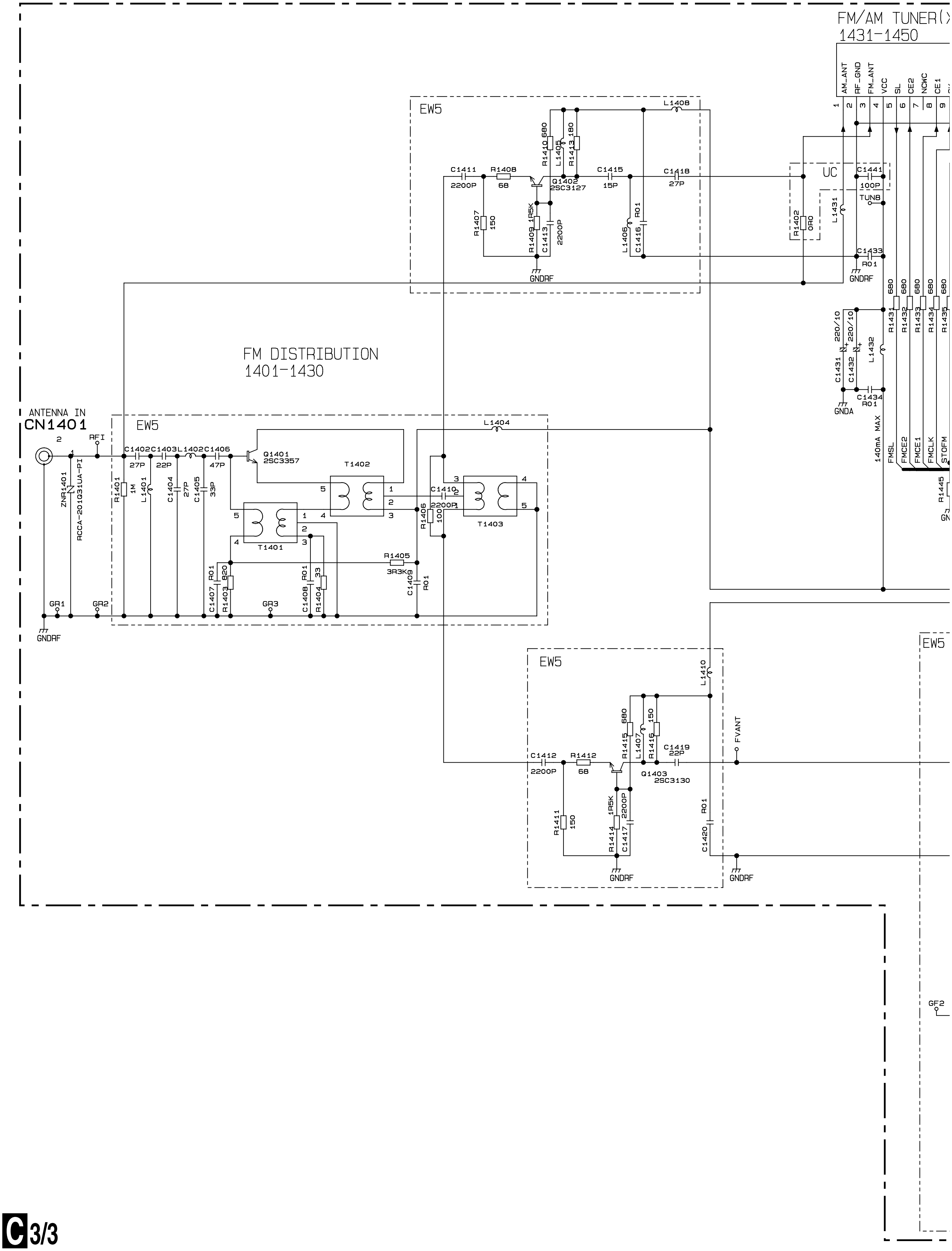


SELECTOR
1331-1340
IC1331
BA7649AF
IC1331 SEQUENCE
A B C OUT
L L L 1 DVD
L L H 2 iPod
L H L 3 AV1
H H L 4 AV2
* * H 5 MUTE
Q1331
DTC114EUA
ISOLATOR
1381-1390
IC1381
NJM2505F
*based on a technical note of iPod
IPODAG
IPODVS
ISOLATOR
1301-1315
IC1301
NJM2137V
ISOLATOR
1316-1330
IC1316
NJM2136V
AU5
4.0V
1876-1880
IC1876
NJM2125F
DVD LPF
1001-1020
IC1001
NJM4558V
ISOLATOR
1021-1030
IC1021
BA4558RFVM
Zin=1MΩ typ.
D1001
DAP202K
Q1001
IMD3A
Q1002
IMD3A
1.4Vrms
=5.14dBs
80pin I/F
1711-1790
Q1711
IMD2A
C1/3
C3/3
VDD5
AV8
VIDEO5
GNDA
GNDV
GNDD
C-a
C-b
NAVI UNIT pin No.
A5/7
CN2055
Source
DVD
TUNER
AV1
AV2
iPod
IP

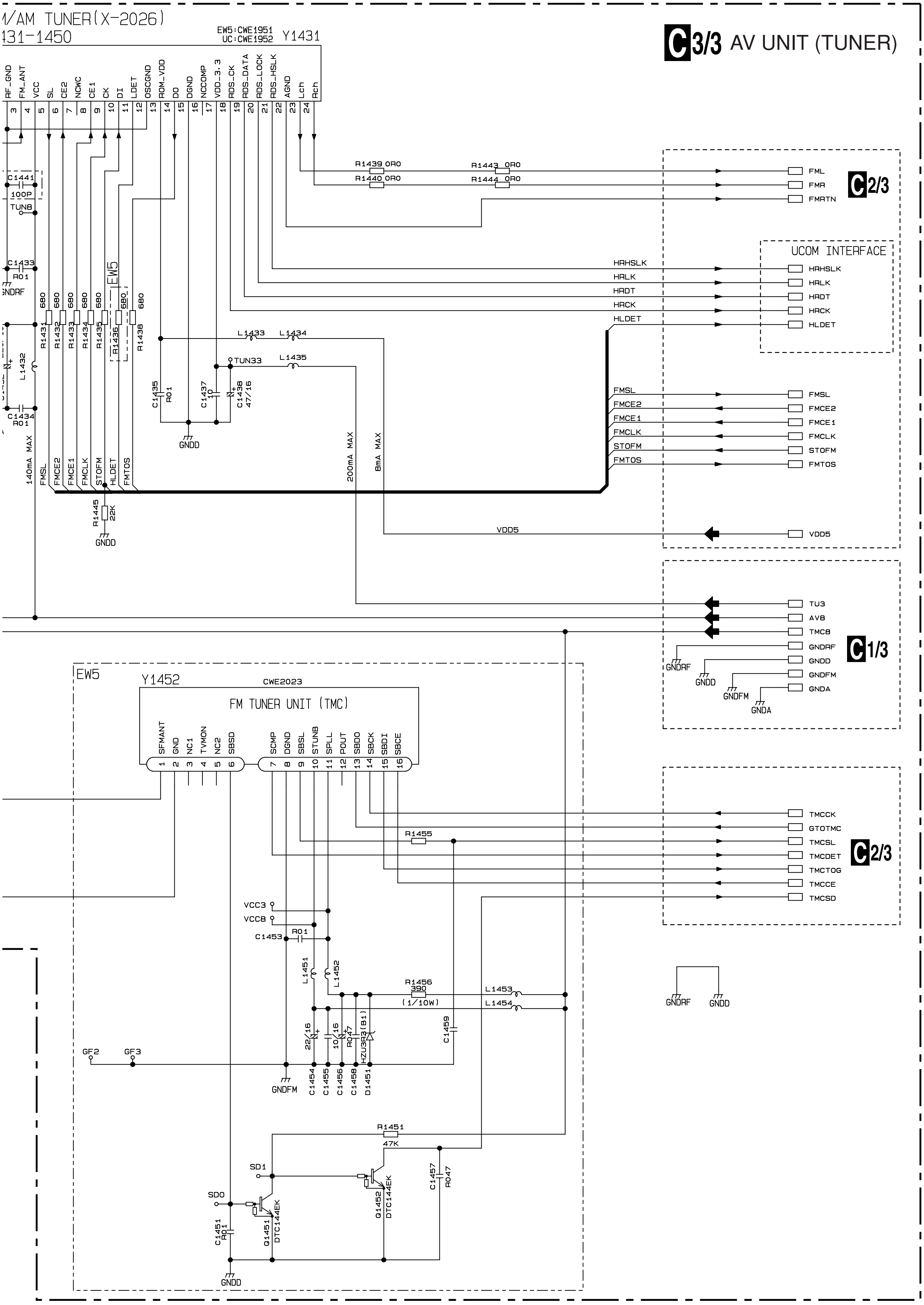
C-a 2/3


C-b 2/3
C-a 2/3
C-a C-b
A 5/7
CN2055
To NAVI MOTHER UNIT:SYSTEM u-com SECTION
CN1711
80pin is not available
C 3/3
SELECTOR
1051-1060
TC4052BFT
IC1051
IC1051 SEQUENCE
A B OUT
L L 0 iPod
H L 1 AV1
L H 2 AV2
H H 3 OFF
Q1051 DTC114EUA
Q1052 DTC114EUA
GUIDE
1111-1130
LPF AMP
10.6kHz 18dB/oct
+4.6dB
A B C
C1117 151 471
C1118 151 471
IC1111 BA4558RFVM (2/2)
IC1111 BA4558RFVM (1/2)
ISOLATOR
Lch MUTE
Q1112 IMD3A
D1111 DAN202K
ISOLATOR
1021-1030
ISOLATOR
1031-1040
ISOLATOR
1041-1050
IC1021 BA4558RFVM (1/2)
IC1021 BA4558RFVM (2/2)
IC1031 BA4558RFVM (1/2)
IC1031 BA4558RFVM (2/2)
IC1041 BA4558RFVM (1/2)
IC1041 BA4558RFVM (2/2)
BA4558RFVM
Zin=1MΩ typ.
*based on a technical note of iPod
0.9Vrms
=1.30dBs
1.0Vrms
=2.21dBs
1.0Vrms
=2.21dBs
AU5
AVB
GNDA
iPodR
VTR1R
VTR2R
iPodL
VTR2L
VTR1L
IPODLS
IPODVG
IPODRS
AV1LG
AV1LS
AV1RG
AV1RS
AV2LS
AV2AG
AV2RS
3
4
5

3.13 AV UNIT (TUNER)



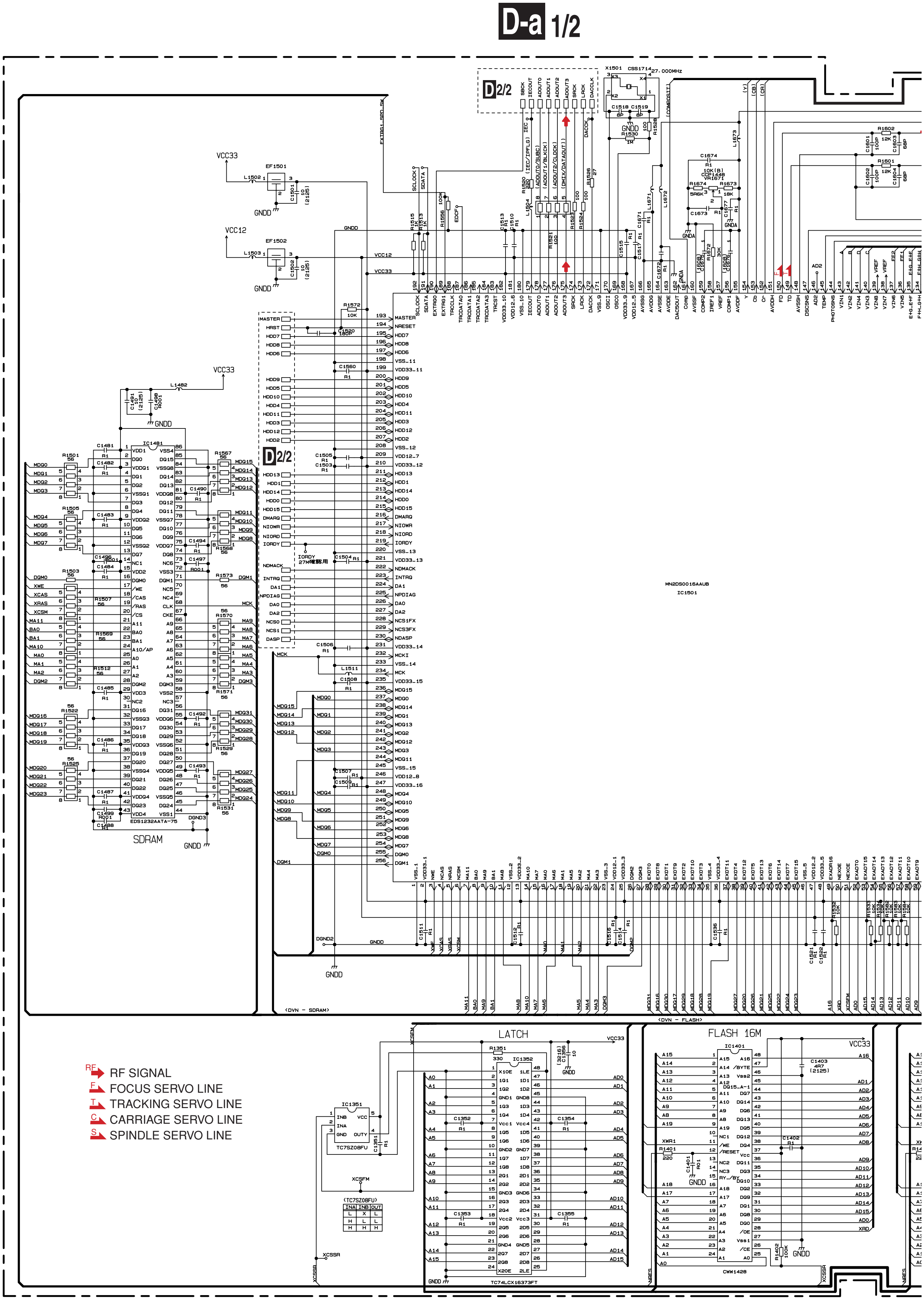
C 3/3 AV UNIT (TUNER)



C 3/3

A B C D E F

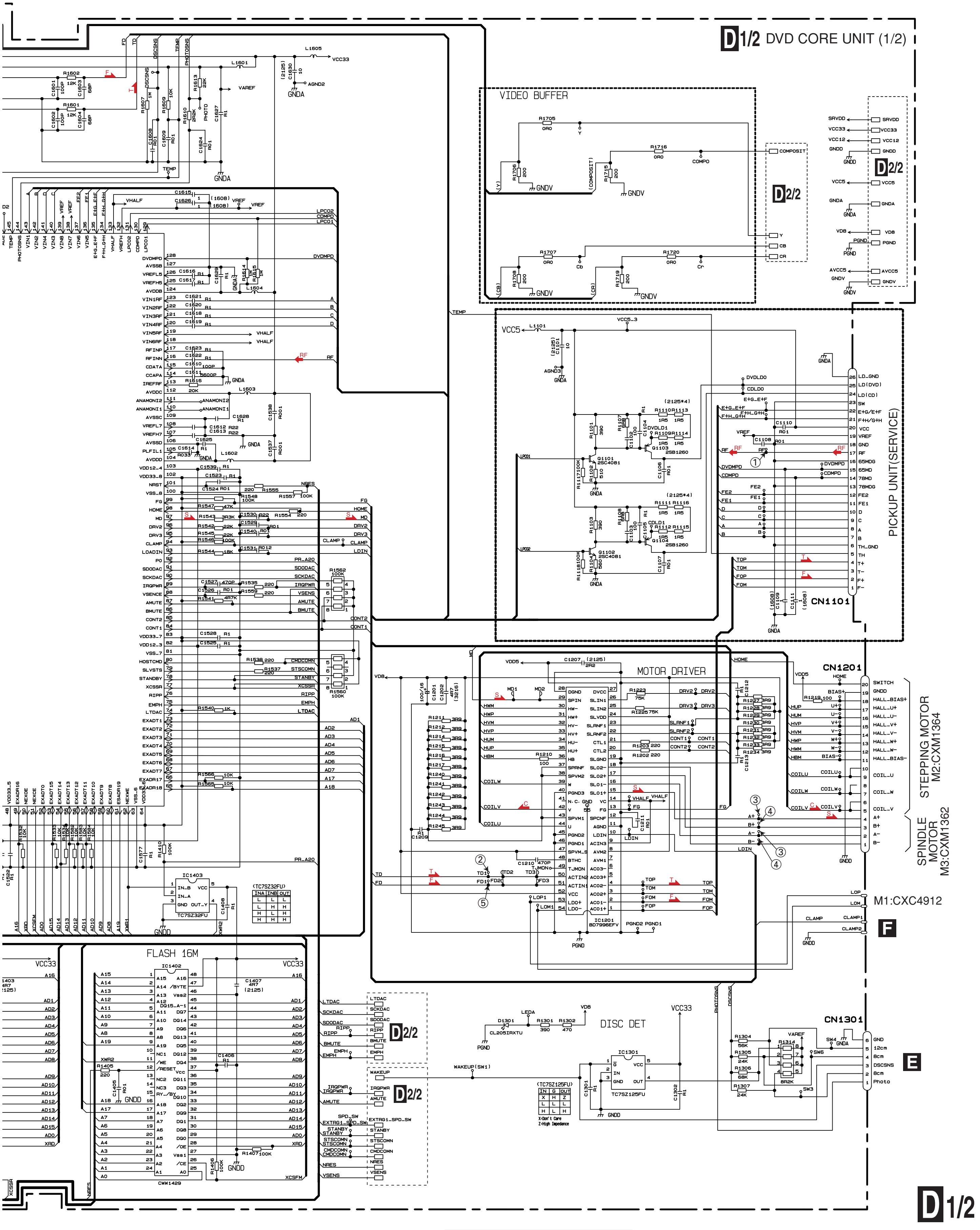
3.14 DVD CORE UNIT (1/2)(GUIDE PAGE)



RF SIGNAL
F FOCUS SERVO LINE
T TRACKING SERVO LINE
C CARRIAGE SERVO LINE
S SPINDLE SERVO LINE

D 1/2

D-b 1/2


D 1/2 DVD CORE UNIT (1/2)
VIDEO BUFFER
D 2/2
COMPOSIT
Y
CB
CR
SRVDD
VCC33
VCC12
GNDD
VCC5
GNDA
VD8
PGND
AVCC5
GNDV
PICKUP UNIT(SERVICE)
CN1101
MOTOR DRIVER
IC1201
BD7996EFV
CN1201
STEPPING MOTOR
M2:CXM1364
SPINDLE MOTOR
M3:CXM1362
M1:CXC4912
F
FLASH 16M
IC1402
CWW1429
IC1403
TC7SZ32FU
DISC DET
IC1301
TC7SZ125FU
CN1301
E
X:Don't Care
Z:High Impedance
D 1/2

A

B

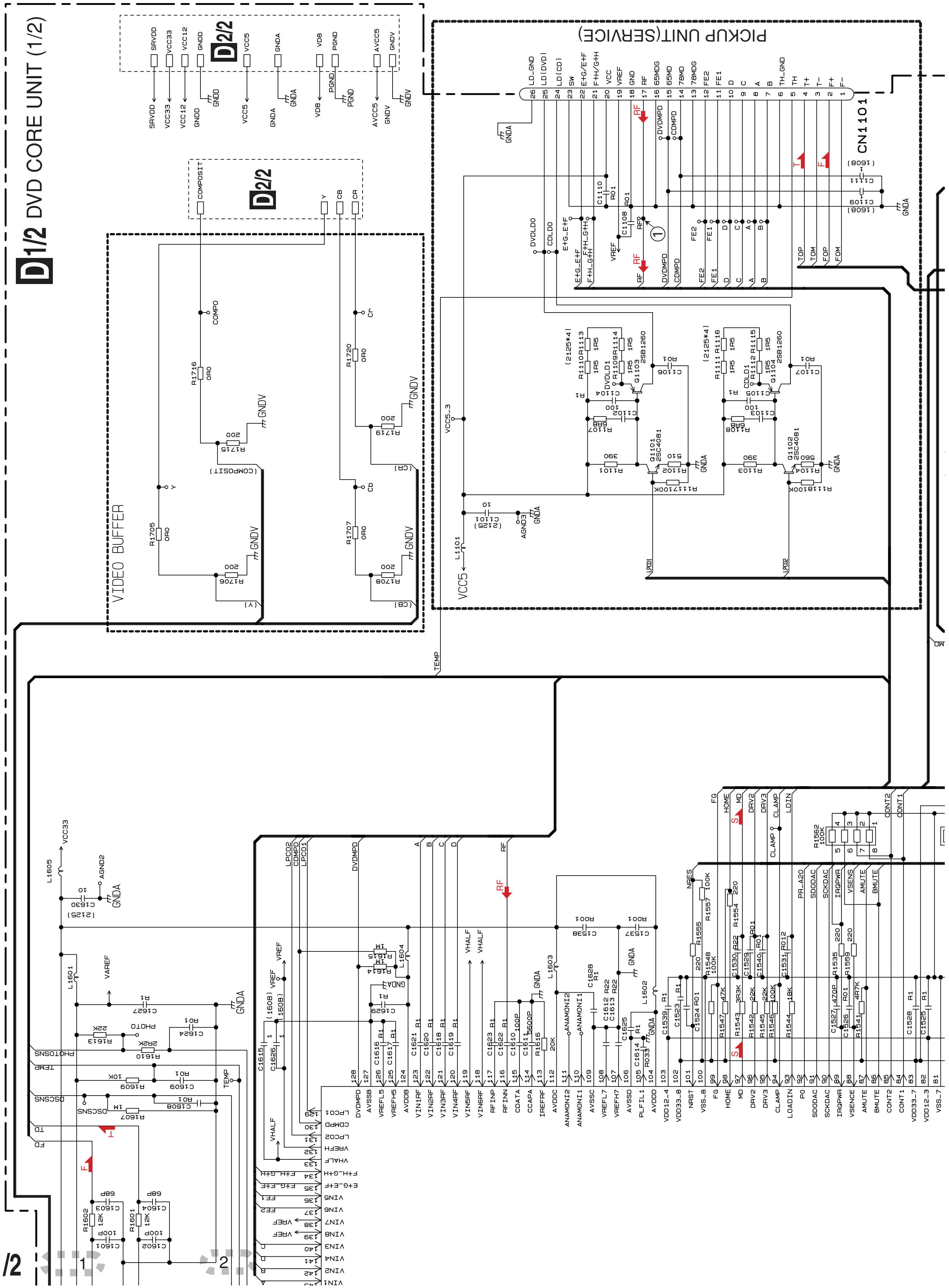
C

D

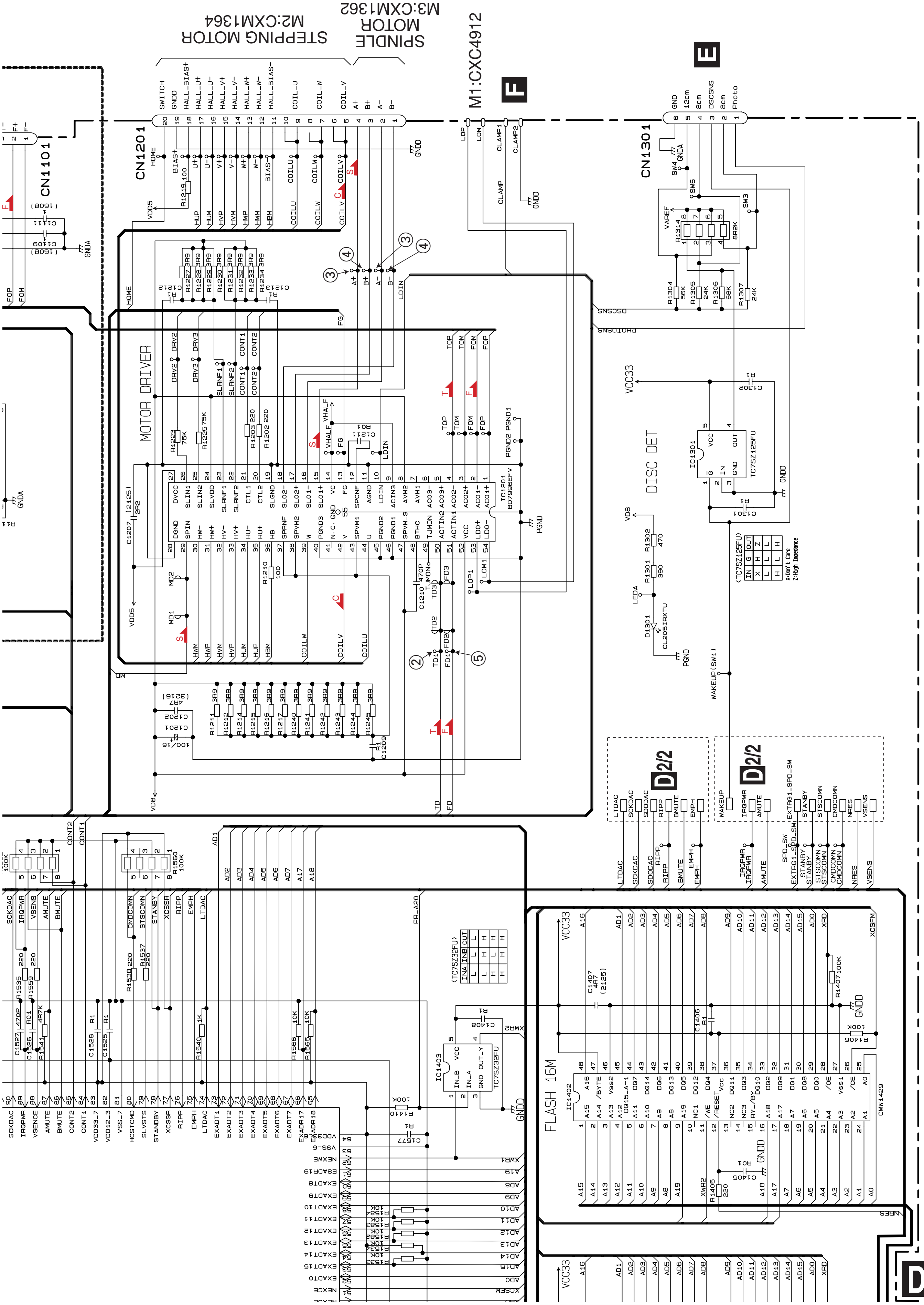
E

F

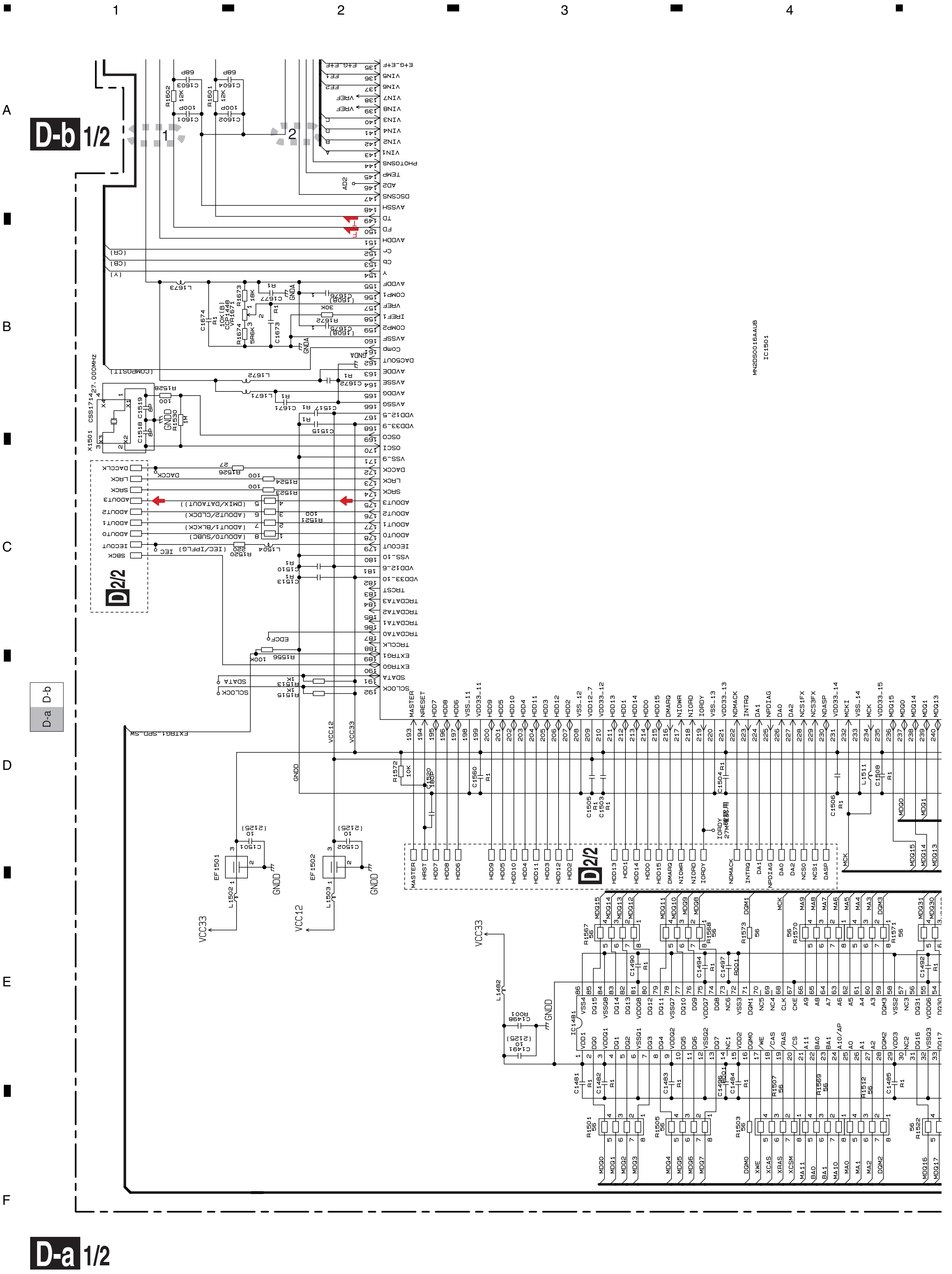
D-a D-b

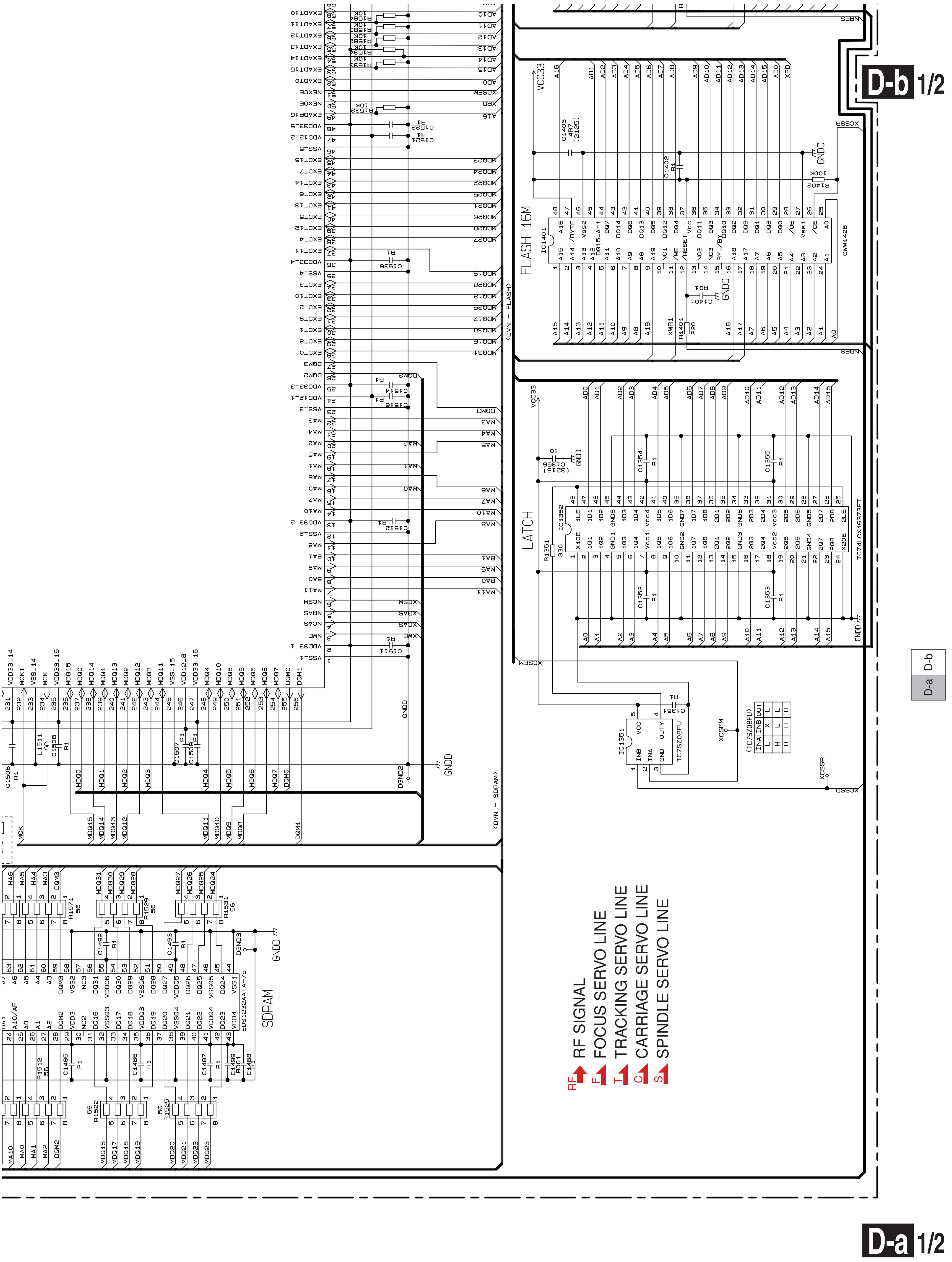


D-b 1/2


SPINDLE MOTOR
M3:CXM1362
STEPPING MOTOR
M2:CXM1364
M1:CXC4912
F
E
CN1201
CN1301
CN1101
MOTOR DRIVER
IC1201
BD7996EFV
DISC DET
IC1301
TC7SZ125FU
VCC33
IC1403
TC7SZ32FU
FLASH 16M
IC1402
CWW1429
D2/2
D2/2
GNDD
GNDA
PGND

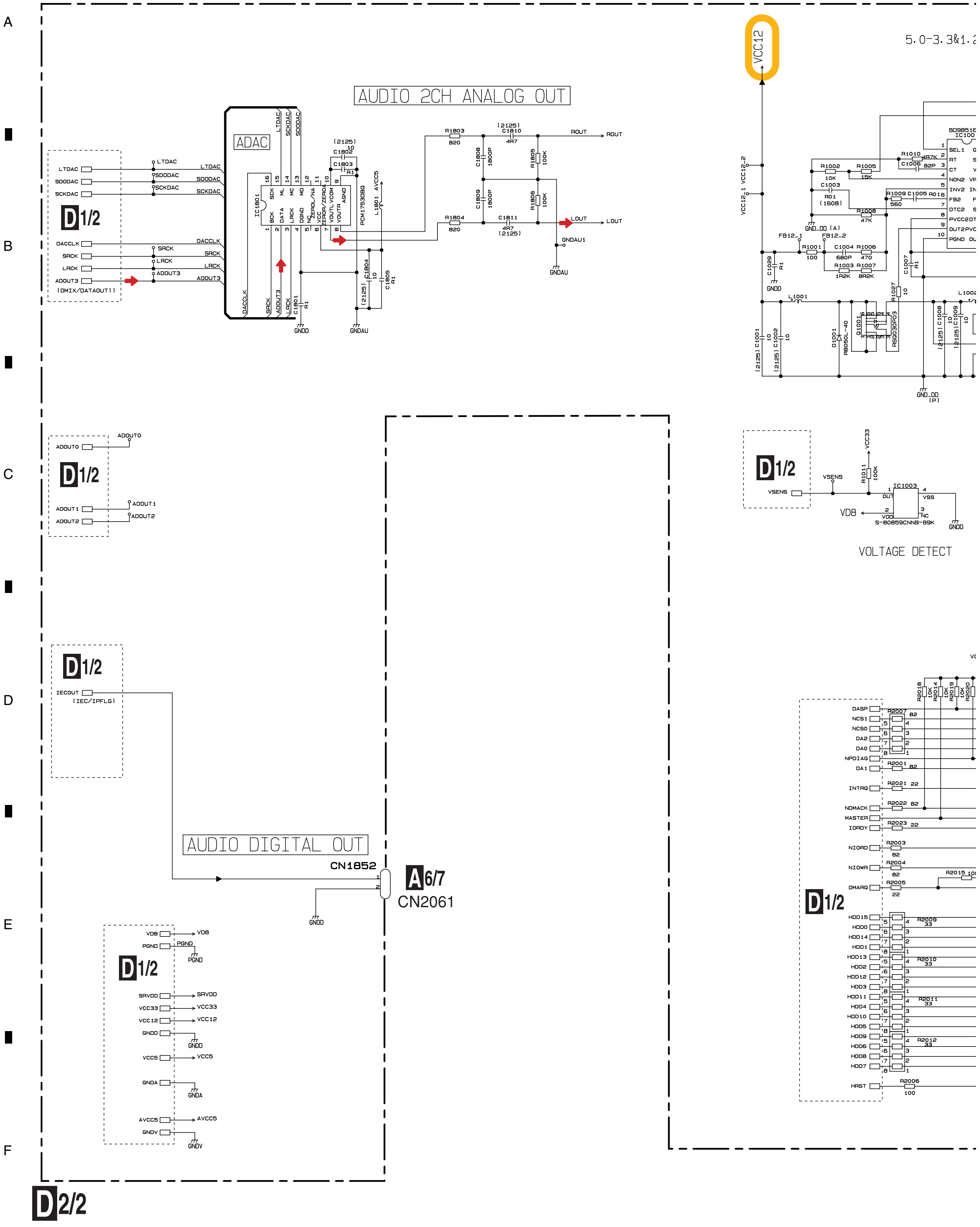
D-a D-b

1
2
3
4
A
B
C
D
E
F
D-b 1/2
D-a 1/2
D-a
D-b
D2/2
IC1501
MN2DS0016AAUB
IC1481
X1501
CSS1714
27.000MHz
EF1501
EF1502
VCC33
VCC12
GNDD
GNDA
E+G_E+F
VIN5
VIN6
VIN7
VIN8
VIN3
VIN4
VIN2
VIN1
PHOTOSNS
TEMP
AD2
DSCSNS
AVSSH
TD
FD
AVDDH
CR
CB
Y
AVDDF
COMP1
VREF
IREF1
COMP2
AVSSF
COMP
DACSOUT
AVDDE
AVSSE
AVDDG
AVSSG
VDD12_5
VDD33_9
OSCO
OSCI
VSS_9
DACCK
LRCK
SRCK
ADOUT3
ADOUT2
ADOUT1
ADOUT0
IECOUT
VSS_10
VDD12_6
VDD33_10
TRCST
TRCDATA3
TRCDATA2
TRCDATA1
TRCDATA0
TRCCLK
EXTRG1
EXTRG0
SDATA
SCLOCK
(COMPOSIT)
(IEC/IPFLG) IEC
(ADOUT0/SUBC)
(ADOUT1/BLKCK)
(ADOUT2/CLDCK)
(DMIX/DATAOUT1)
DACCLK
SBCK
EDCF
EXTRG1_SPD_SW
MASTER
NRESET
HDD7
HDD8
HDD6
VSS_11
VDD33_11
HDD9
HDD5
HDD10
HDD4
HDD11
HDD3
HDD12
HDD2
VSS_12
VDD12_7
VDD33_12
HDD13
HDD1
HDD14
HDD0
HDD15
DMARQ
NIOWR
NIORD
IORDY
VSS_13
VDD33_13
NDMACK
INTRQ
DA1
NPDIAG
DA0
DA2
NCS1FX
NCS3FX
NDASP
VDD33_14
MCKI
VSS_14
MCK
VDD33_15
MDQ15
MDQ0
MDQ14
MDQ1
MDQ13
HRST
NCS0
NCS1
DASP
MDQ12
MDQ11
MDQ10
MDQ9
MDQ8
DQM1
MA9
MA8
MA7
MA6
MA5
MA4
MA3
DQM3
MDQ31
MDQ30
VDD1
DQ0
VDDQ1
DQ1
DQ2
VSSQ1
DQ3
DQ4
VDDQ2
DQ5
DQ6
VSSQ2
DQ7
NC1
VDD2
DQM0
/WE
/CAS
/RAS
/CS
A11
BA0
BA1
A10/AP
A0
A1
A2
DQM2
VDD3
NC2
DQ16
VSSQ3
VSS4
DQ15
VSSQ8
DQ14
DQ13
VDDQ8
DQ12
DQ11
VSSQ7
DQ10
DQ9
VDDQ7
DQ8
NC6
VSS3
NC5
NC4
CLK
CKE
A9
A8
A7
A6
A5
A4
A3
VSS2
NC3
DQ31
VDDQ6
DQ30
MDQ0
MDQ1
MDQ2
MDQ3
MDQ4
MDQ5
MDQ6
MDQ7
DQM0
XWE
XCAS
XRAS
XCSM
MA11
BA0
BA1
MA10
MA0
MA1
MA2
DQM2
MDQ16
MDQ17
IORDY 27MHz
R1502 12K
R1601 12K
C1603 68P
C1604 68P
C1601 100P
C1602 100P
L1673
L1672
L1671
R1673 18K
VR1671 10K(B)
R1674 5R6K
CCP1448
C1674
C1673
C1677 R1
C1676 (1608)
C1675 (1608)
R1672 30K
C1672 R1
C1671 R1
C1517 R1
C1515 R1
R1528 100
C1518 8P
C1519 8P
R1530 1M
R1526 27
R1524 100
R1523 100
R1521 100
R1520 220
L1504
C1510 R1
C1513 R1
R1556 100K
R1513 1K
R1515 1K
R1572 10K
C1520 180P
C1560 R1
C1505 R1
C1503 R1
C1504 R1
C1506 R1
L1511
C1508 R1
C1501 10 (2125)
C1502 10 (2125)
L1502
L1503
L1482
C1498 R001
C1491 10 (2125)
R1567 56
R1568 56
R1573 56
R1570 56
R1571 56
C1490 R1
C1494 R1
C1497 R001
C1492 R1
C1481 R1
C1482 R1
C1483 R1
C1496 R001
C1484 R1
C1485 R1
R1507 56
R1569 56
R1512 56
R1501 56
R1505 56
R1503 56
R1522 56

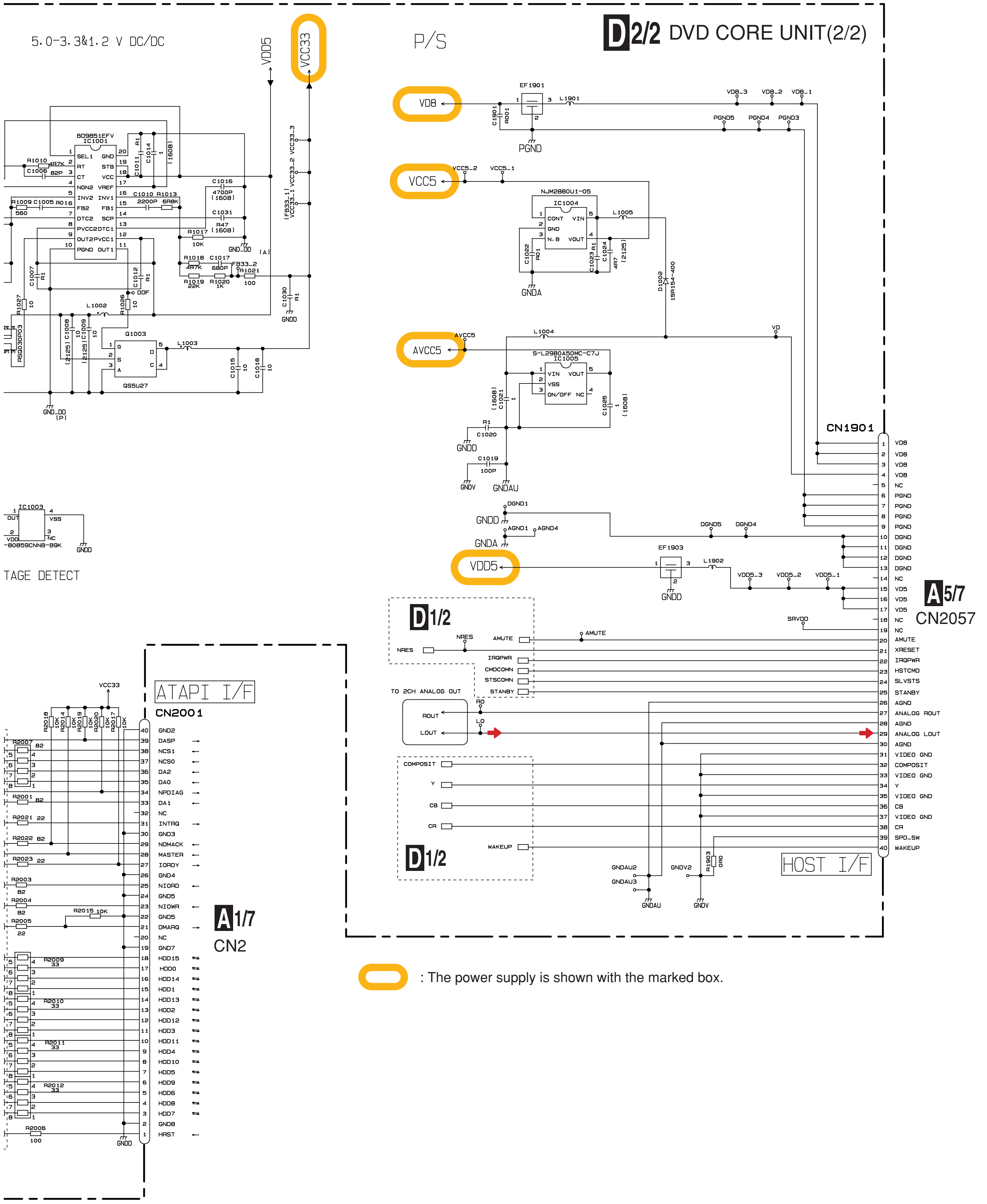


5
6
7
8
A
B
C
D
E
F
D-b 1/2
D-a 1/2
D-a D-b
FLASH 16M
IC1401
CWW1428
VCC33
GNDD
XCSSR
VREG
LATCH
IC1352
TC74LCX16373FT
IC1351
TC7SZ08FU
XCSFM
XCSEM
(TC7SZ08FU)
INA INB OUT
SDRAM
EDS1232AATA-75
<DVN - FLASH>
<DVN - SDRAM>
DGND2
DGND3
RF SIGNAL
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE

3.15 DVD CORE UNIT (2/2)



D 2/2 DVD CORE UNIT(2/2)



: The power supply is shown with the marked box.

D 2/2

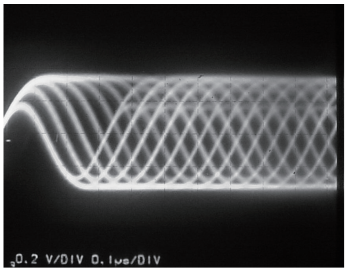
Waveforms

Note:1. The encircled number denote measuring points in the circuit diagram.
2. Reference voltage: 1.65 V(TD1,FD1)(=VHALF)
2.2 V(RF)(=VREF)

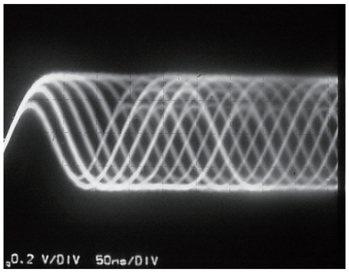
In the waveform, it is seeing on the GND standard.
Offset of 1.65 V or 2.2 V is put in.

1 RF
2 TD1
3 A+, A-
4 B+, B-
5 FD1

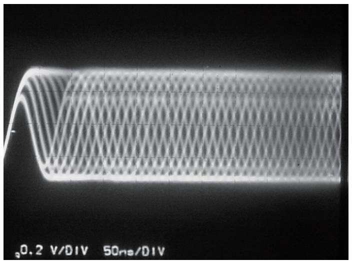
①RF 0.2 V/div(AC) 0.1 µs/div
CDRF(x 4 CLV)



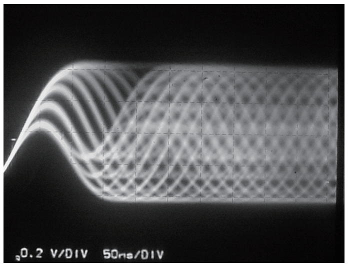
①RF 0.2 V/div(AC) 50 ns/div
CDRF(x 20 CAV Inner peripheral)



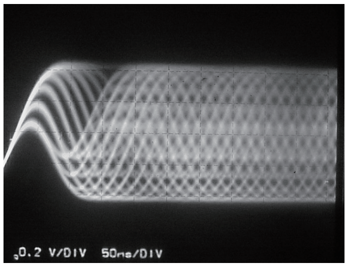
①RF 0.2 V/div(AC) 50 ns/div
CDRF(x 20 CAV Peripheral)



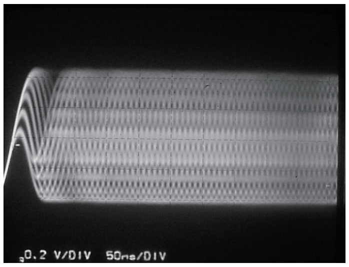
①RF 0.2 V/div(AC) 50 ns/div
DVDRF(x 1.3 ZCAV)



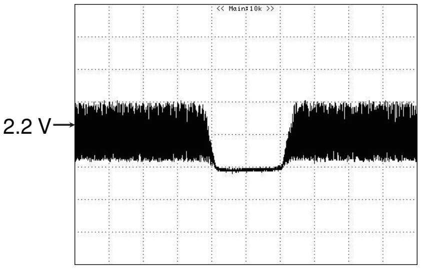
①RF 0.2 V/div(AC) 50 ns/div
DVDRF(x 5 CAV Inner peripheral)



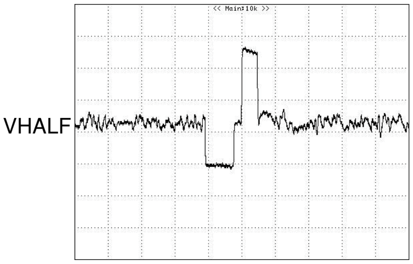
①RF 0.2 V/div(AC) 50 ns/div
DVDRF(x 5 CAV Peripheral)



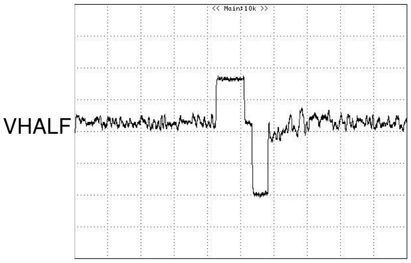
①RF 0.5 V/div 100 µs/div
DVDRF(BD1 mm)



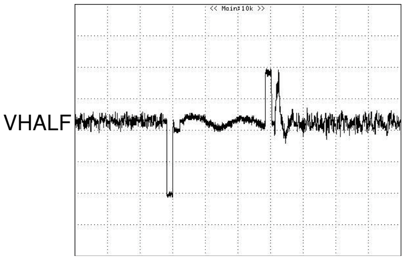
②TD1 0.1 V/div 100 µs/div
Interval FWD



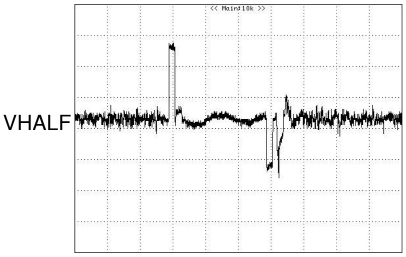
②TD1 0.1 V/div 100 µs/div
Interval REV



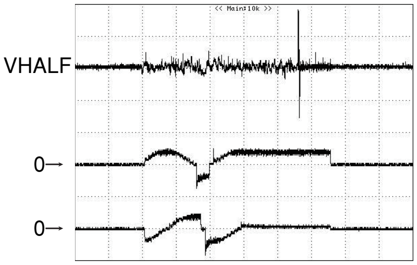
②TD1 0.1 V/div 500 µs/div
Multi 32 FWD



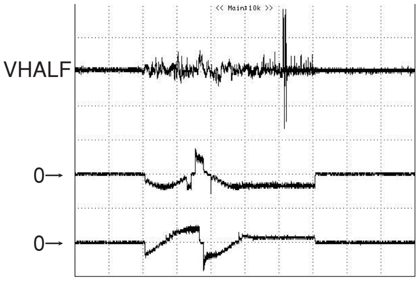
②TD1 0.1 V/div 500 µs/div
Multi 32 REV



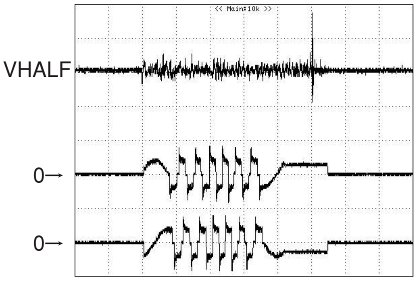
②CH1 : TD1 0.5 V/div 10 ms/div
③CH2 : A^{+}-A^{-} 10.0 V/div 10 ms/div
(LPF of the oscilloscope is set to 10 kHz)
④CH3 : B^{+}-B^{-} 10.0 V/div 10 ms/div
(LPF of the oscilloscope is set to 10 kHz)
Traverse 900 FWD(Short)



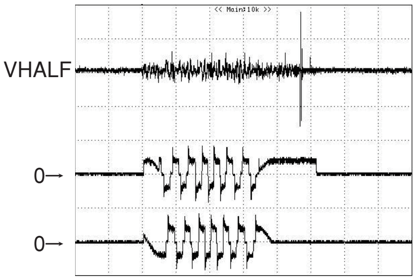
②CH1 : TD1 0.5 V/div 10 ms/div
③CH2 : A^{+}-A^{-} 10.0 V/div 10 ms/div
(LPF of the oscilloscope is set to 10 kHz)
④CH3 : B^{+}-B^{-} 10.0 V/div 10 ms/div
(LPF of the oscilloscope is set to 10 kHz)
Traverse 900 REV(Short)



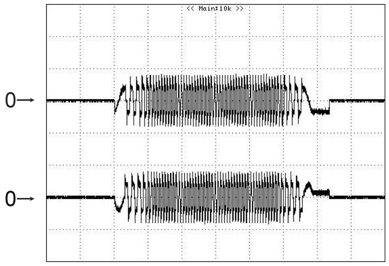
②CH1 : TD1 0.5 V/div 20 ms/div
③CH2 : A^{+}-A^{-} 10.0 V/div 20 ms/div
(LPF of the oscilloscope is set to 10 kHz)
④CH3 : B^{+}-B^{-} 10.0 V/div 20 ms/div
(LPF of the oscilloscope is set to 10 kHz)
Traverse 5 000 FWD(Long)



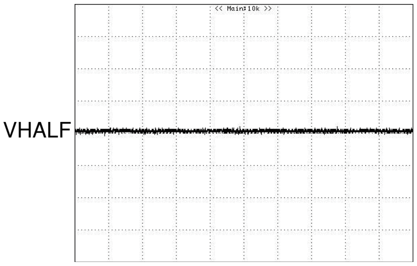
②CH1 : TD1 0.5 V/div 20 ms/div
③CH2 : A^{+}-A^{-} 10.0 V/div 20 ms/div
(LPF of the oscilloscope is set to 10 kHz)
④CH3 : B^{+}-B^{-} 10.0 V/div 20 ms/div
(LPF of the oscilloscope is set to 10 kHz)
Traverse 5 000 REV(Long)



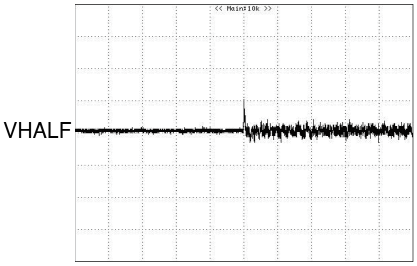
③CH : A^{+}-A^{-} 10 V/div 50 ms/div
④CH2 : B^{+}-B^{-}
ID search Inside → Outside



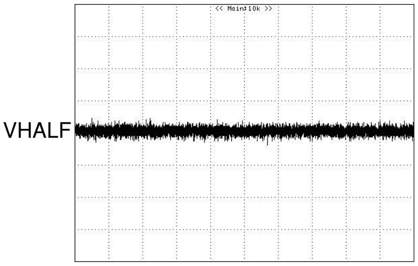
②TD1 0.5 Vdiv 20 ms/div
Play TD



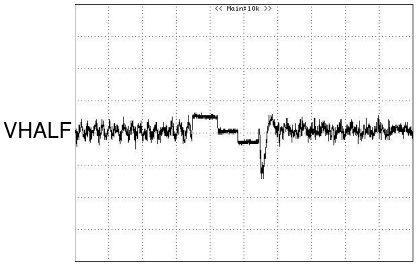
⑤FD1 0.5 V/div 1 ms/div
Focus Close



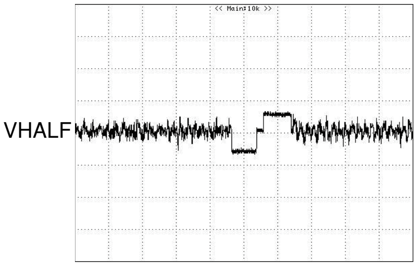
⑤FD1 0.5 V/div 20 ms/div
Play FD



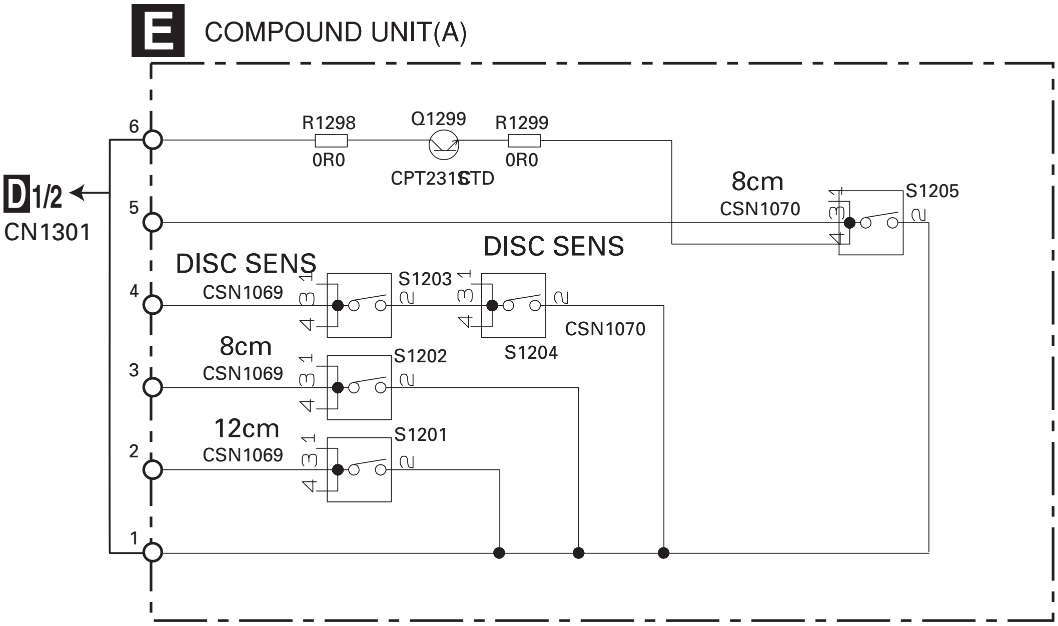
⑤FD1 0.5 V/div 500 µs/div
Focus Jump L0→L1

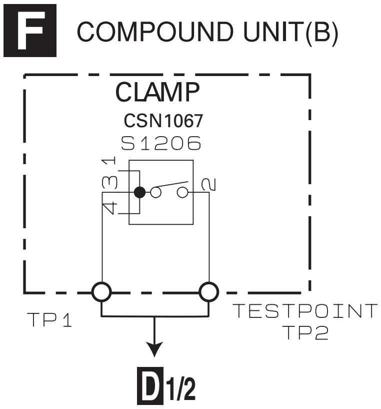


⑤FD1 0.5 V/div 500 µs/div
Focus Jump L1→L0



3.16 COMPOUND UNIT(A), COMPOUND UNIT(B)





A

B

C

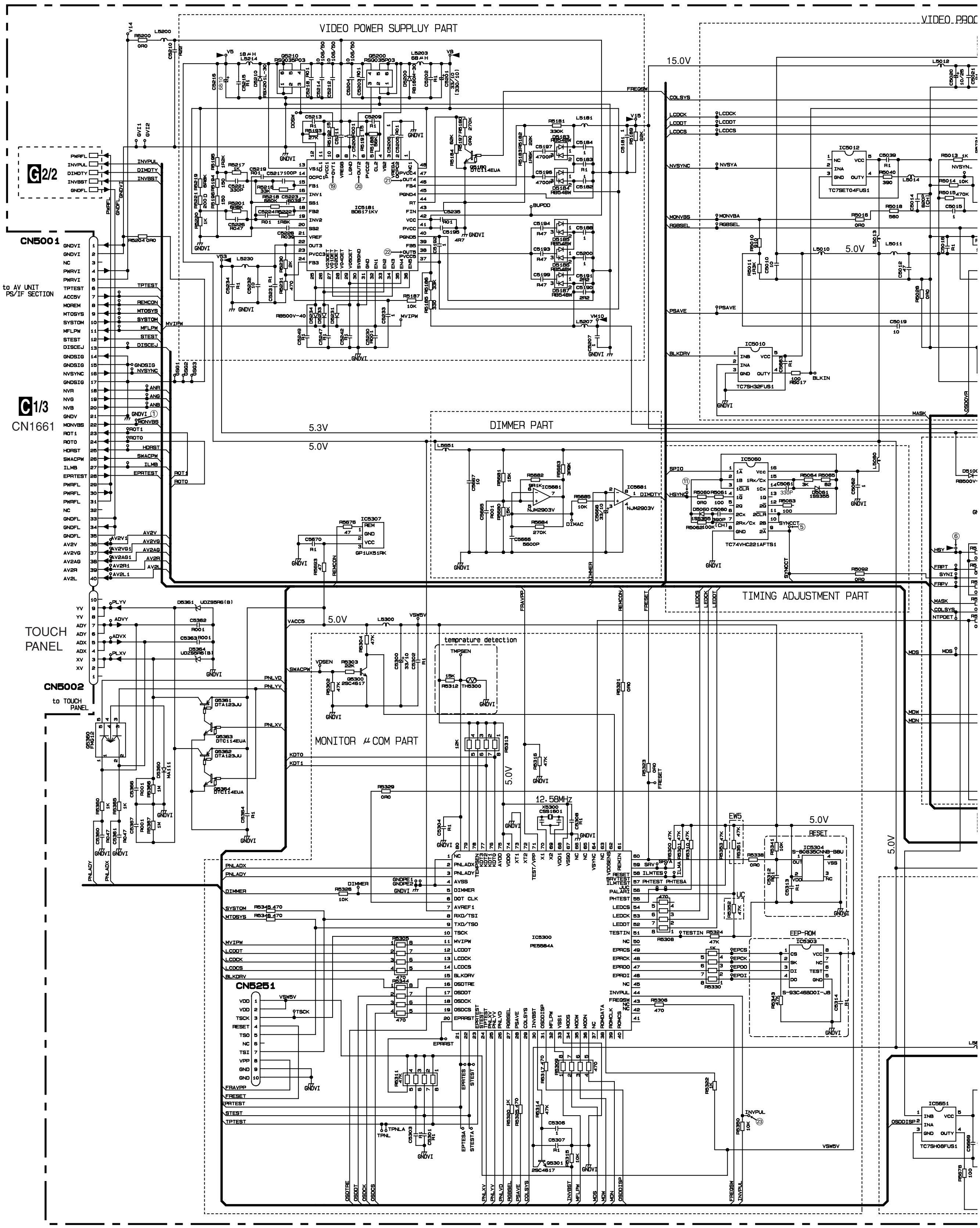
D

E

F

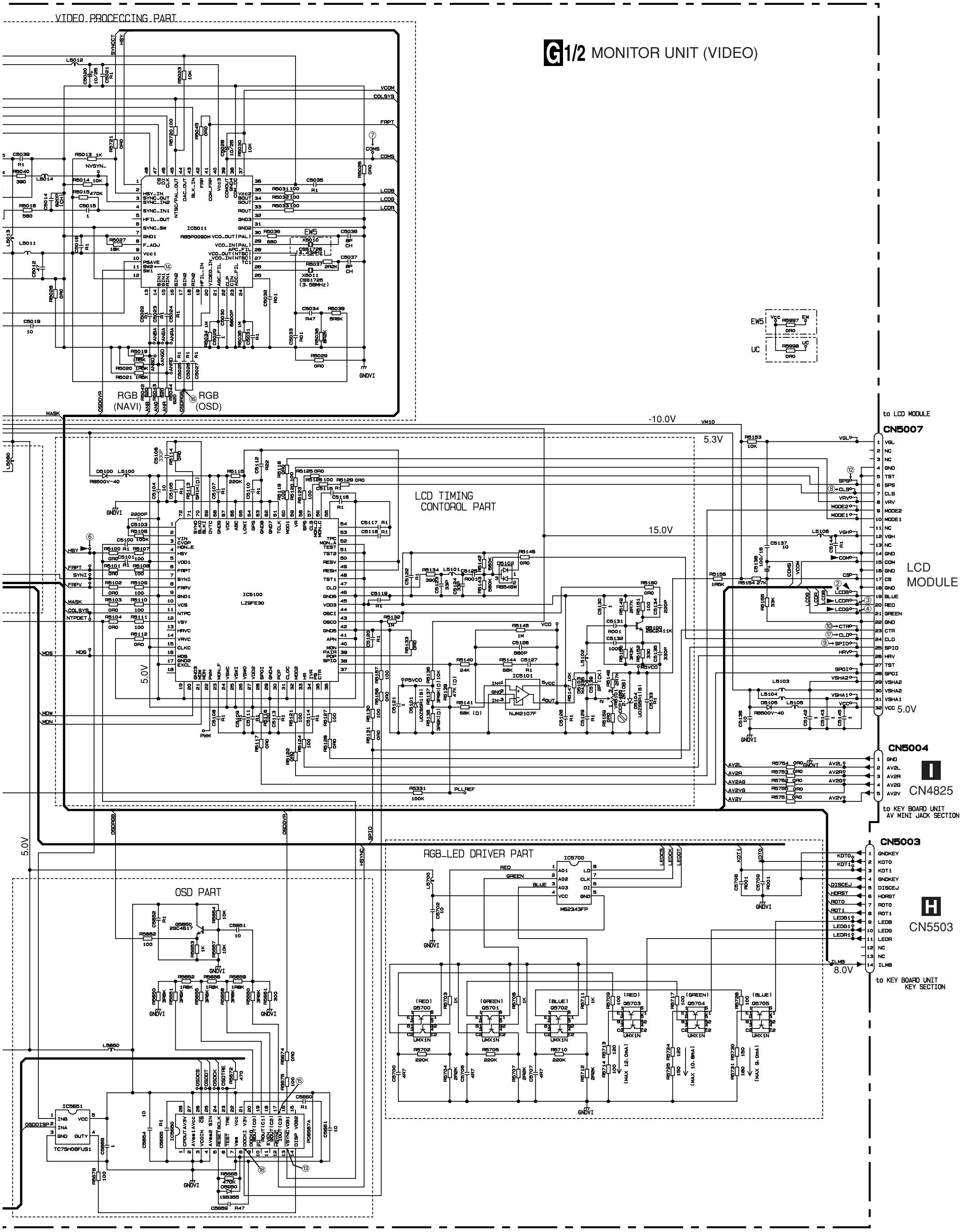
3.17 MONITOR UNIT (VIDEO)(GUIDE PAGE)

G-a 1/2



G 1/2

G-b 1/2


G 1/2 MONITOR UNIT (VIDEO)
VIDEO PROCECCING PART
IC5011
R5P0090M
EW5
X5010
X5011
CSB1726 (3.58MHz)
RGB (NAVI)
RGB (OSD)
GNDVI
LCD TIMING CONTOROL PART
IC5100
LZ9FE30
IC5101
NJM2107F
Q5100
2SA1411K
D5102
RB548W
D5100
RB500V-40
-10.0V
5.3V
15.0V
5.0V
8.0V
VM10
to LCD MODULE
CN5007
VGL
NC
GND
TST
SPS
CLS
VRV
MODE2
MODE1
VGH
COM
CS
BLUE
RED
GREEN
CTR
CLD
SPIO
HRV
SPOI
VSHA2
VSHA1
VCC
LCD MODULE
CN5004
AV2L
AV2R
AV2G
AV2V
I
CN4825
to KEY BOARD UNIT AV MINI JACK SECTION
CN5003
GNDKEY
KDT0
KDT1
DISCEJ
HDRST
ROT0
ROT1
LEDB
LEDG
LEDR
ILMB
H
CN5503
to KEY BOARD UNIT KEY SECTION
RGB_LED DRIVER PART
IC5700
M62343FP
RED
GREEN
BLUE
(RED) Q5700 UMX1N
(GREEN) Q5701 UMX1N
(BLUE) Q5702 UMX1N
(RED) Q5703 UMX1N
(GREEN) Q5704 UMX1N
(BLUE) Q5705 UMX1N
(MAX 12.0mA)
(MAX 10.8mA)
(MAX 9.0mA)
OSD PART
Q5650
2SC4617
IC5651
TC7SH08FUS1
IC5650
PD6587A
D5650
1SS355
OSDDISP
EW5
UC
MASK
HSY
FRPT
SYNI
FRPV
COLSYS
NTPDET
MDS
MDH
MDN
PWM
PLLREF
VCOM
COLSYS
FRPT
COMS
LCDB
LCDG
LCDR
HSYNC
SPIO
OSDVS
OSDRGB

A

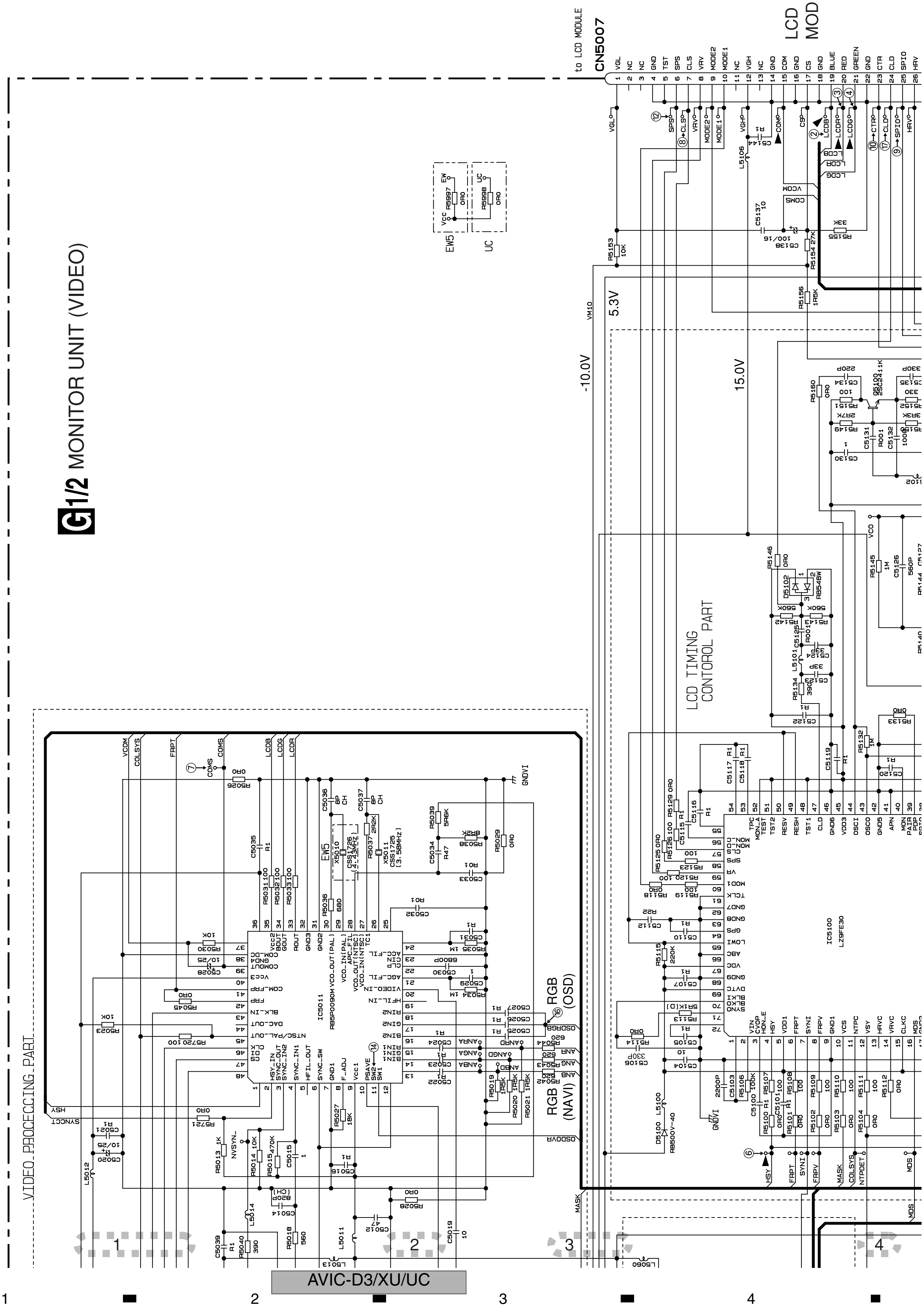
B

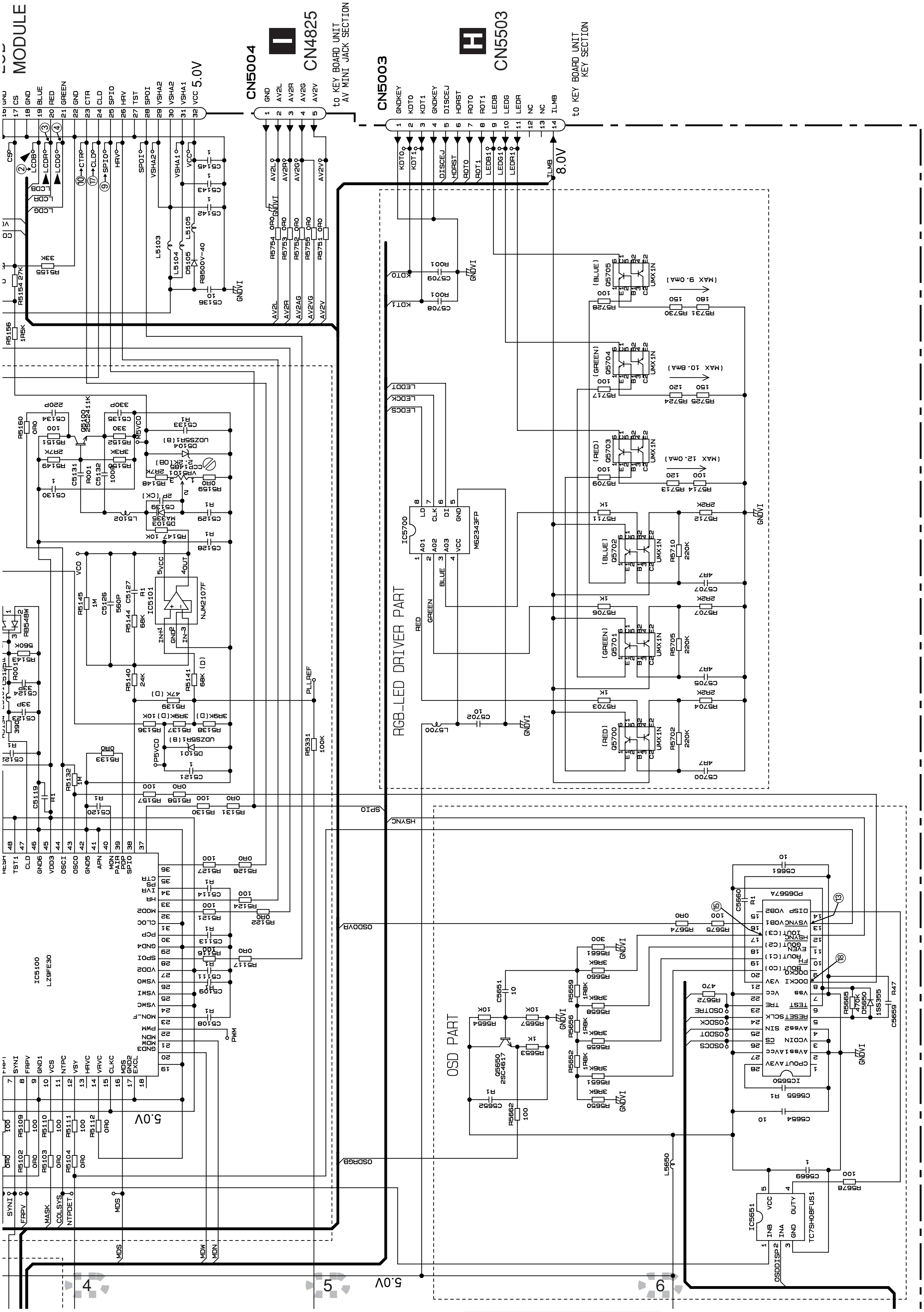
C

D

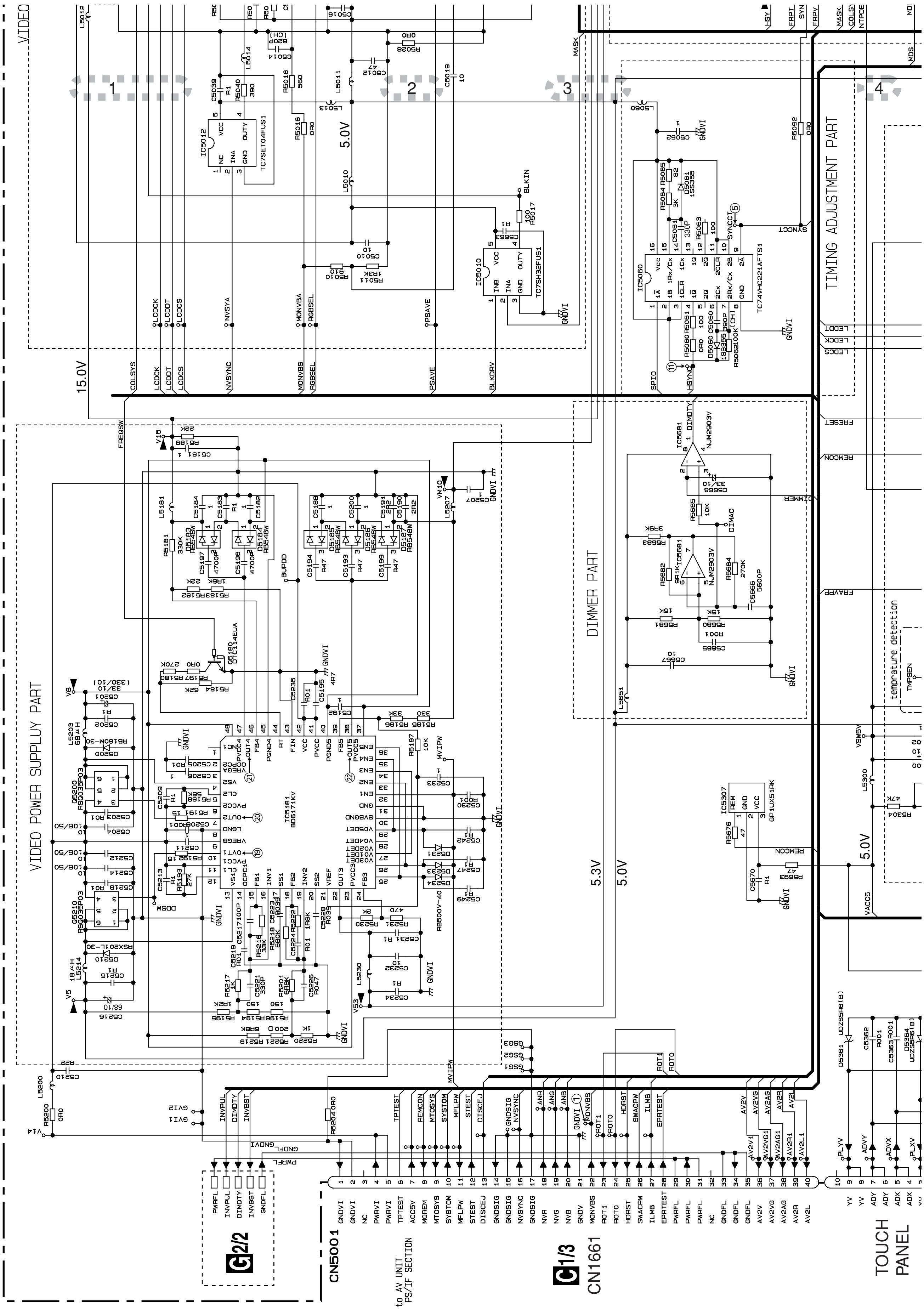
E

F


G 1/2 MONITOR UNIT (VIDEO)
to LCD MODULE
CN5007
LCD MODULE
1 VGL
2 NC
3 NC
4 GND
5 TST
6 SPS
7 CLS
8 VRV
9 MODE2
10 MODE1
11 NC
12 VGH
13 NC
14 GND
15 COM
16 GND
17 CS
18 GND
19 BLUE
20 RED
21 GREEN
22 GND
23 CTR
24 CLD
25 SPIO
26 HRV
EW5
UC
R5997 EW 0R0
R5998 UC 0R0
VM10
5.3V
-10.0V
15.0V
R5153 10K
C5137 10
C5138 100/16
R5154 27K
R5155 33K
R5156 1R5K
L5106
LCD TIMING CONTOROL PART
IC5100 LZ9FE30
D5102 RB548W
Q5100 2SC2411K
R5160 0R0
VCO
R5145 1M
C5126 560P
VIDEO PROCECCING PART
IC5011 RB5P0090M
X5010 CSB1726 4.43MHz
X5011 CSB1725 (3.58MHz)
RGB (OSD)
RGB (NAVI)
OSDRGB
OSDOVR
ANR
ANG
ANB
VCOM
COLSYS
FRPT
COMS
LCDB
LCDG
LCDR
GNDVI
HSY
SYNCCT
NVSYN
MASK
D5100 RB500V-40
L5100
HSY
FRPT
SYNI
FRPV
MASK
COLSYS
NTPDET
MDS
1
2
3
4


MODULE
5.0V
CN5004
I
CN4825
to KEY BOARD UNIT
AV MINI JACK SECTION
GND
AV2L
AV2R
AV2G
AV2V
CN5003
H
CN5503
to KEY BOARD UNIT
KEY SECTION
GNDKEY
KDT0
KDT1
GNDKEY
DISCEJ
HDRST
ROT0
ROT1
LEDB
LEDG
LEDR
NC
NC
ILMB
8.0V
RGB_LED DRIVER PART
IC5700
M62343FP
(MAX 9.0mA)
(MAX 10.8mA)
(MAX 12.0mA)
UMX1N
IC5101
NJM2107F
PLLREF
IC5100
LZ9FE30
OSD PART
IC5650
PD6567A
IC5651
TC7SH08FUS1
Q5650
2SC4617
OSDVR
HSYNC
SPIO
OSDRGB
OSDDISP2
5.0V
4
5
6

G-b 1/2


VIDEO
1
2
3
4
15.0V
5.0V
5.3V
5.0V
VIDEO POWER SUPPLUY PART
DIMMER PART
TIMING ADJUSTMENT PART
temprature detection
IC5012 TC7SET04FUS1
IC5010 TC7SH32FUS1
IC5060 TC74VHC221AFTS1
IC5181 BD6171KV
IC5681 NJM2903V
IC5307 GP1UX51RK
Q5200 RSQ035P03
Q5210 RSQ035P03
Q5180 DTC114EUA
COLSYS
LCDCK
LCDDT
LCDCS
NVSYNC
MONVBS
RGBSEL
PSAVE
BLKDRV
BLKIN
SYNCCT
HSYNC
SPIO
FREQSW
REMCON
DIMMER
FRAVPP
DIMAC
DIMDTY
G 2/2
PWRFL
INVPUL
DIMDTY
INVBST
GNDFL
CN5001
to AV UNIT PS/IF SECTION
C 1/3
CN1661
TOUCH PANEL

G-a 1/2

A

B

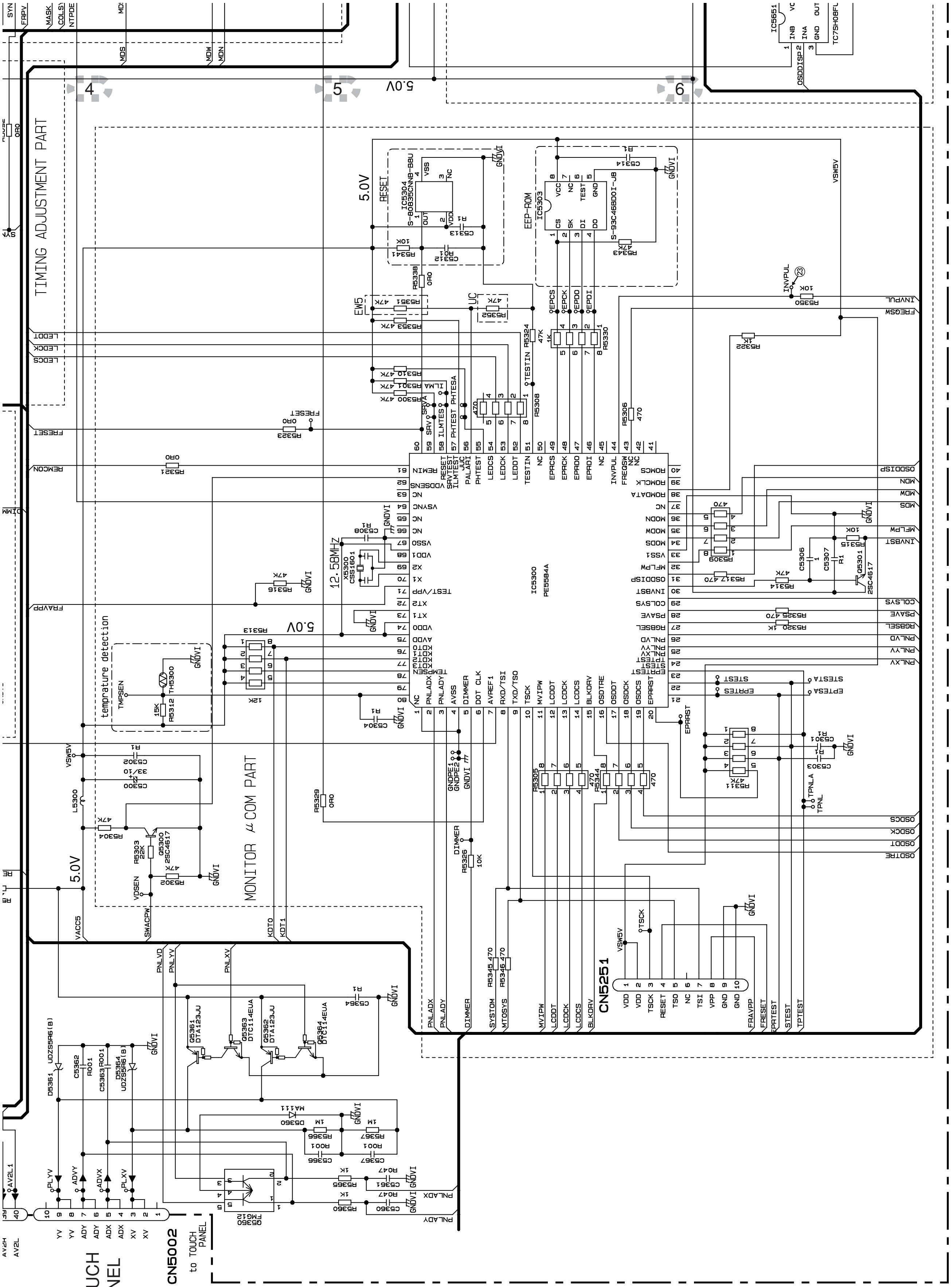
C

D

E

F

G-b 1/2



G-a G-b

G-a 1/2

3.18 MONITOR UNIT (INVERTER)

A

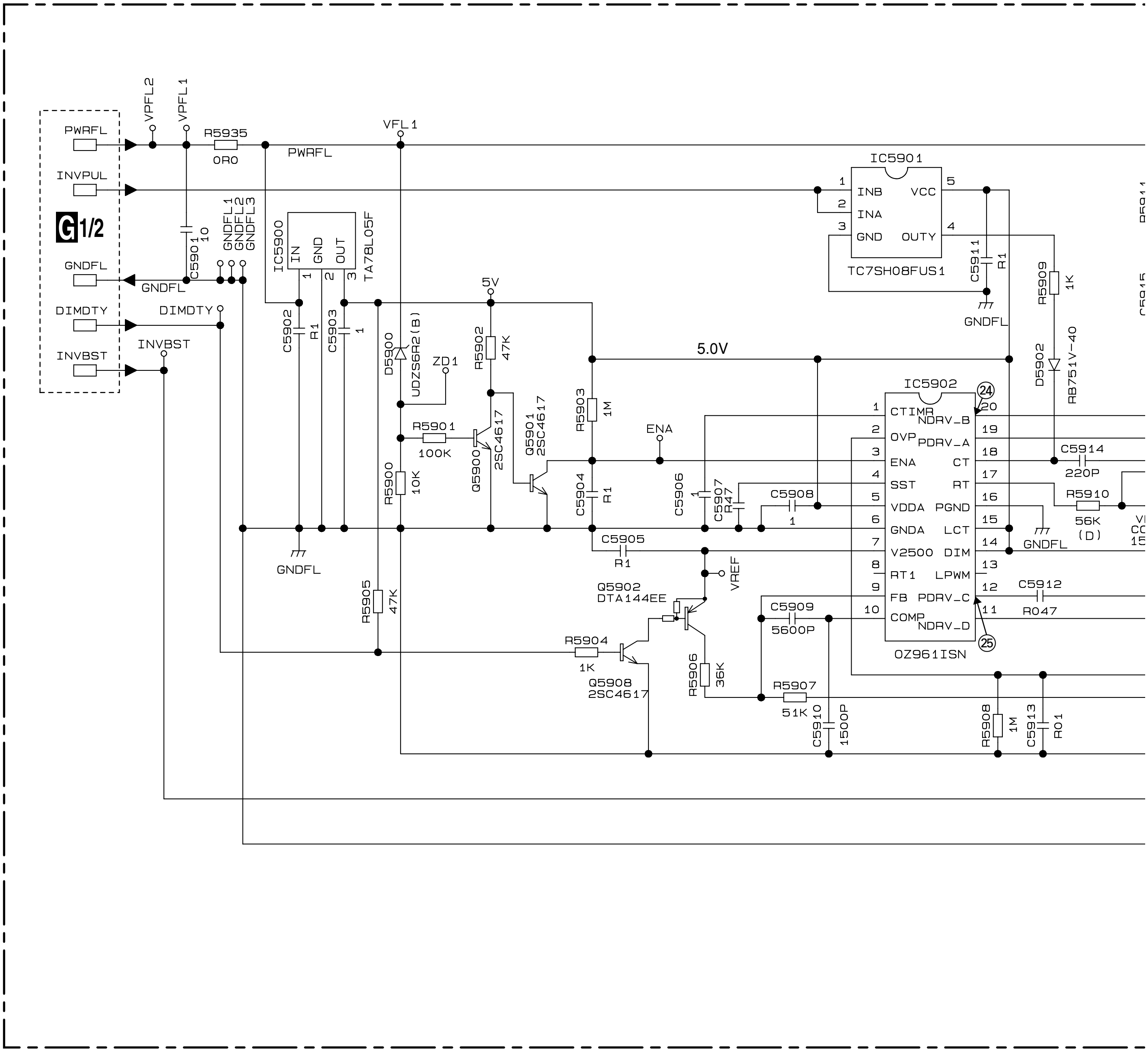
B

C

D

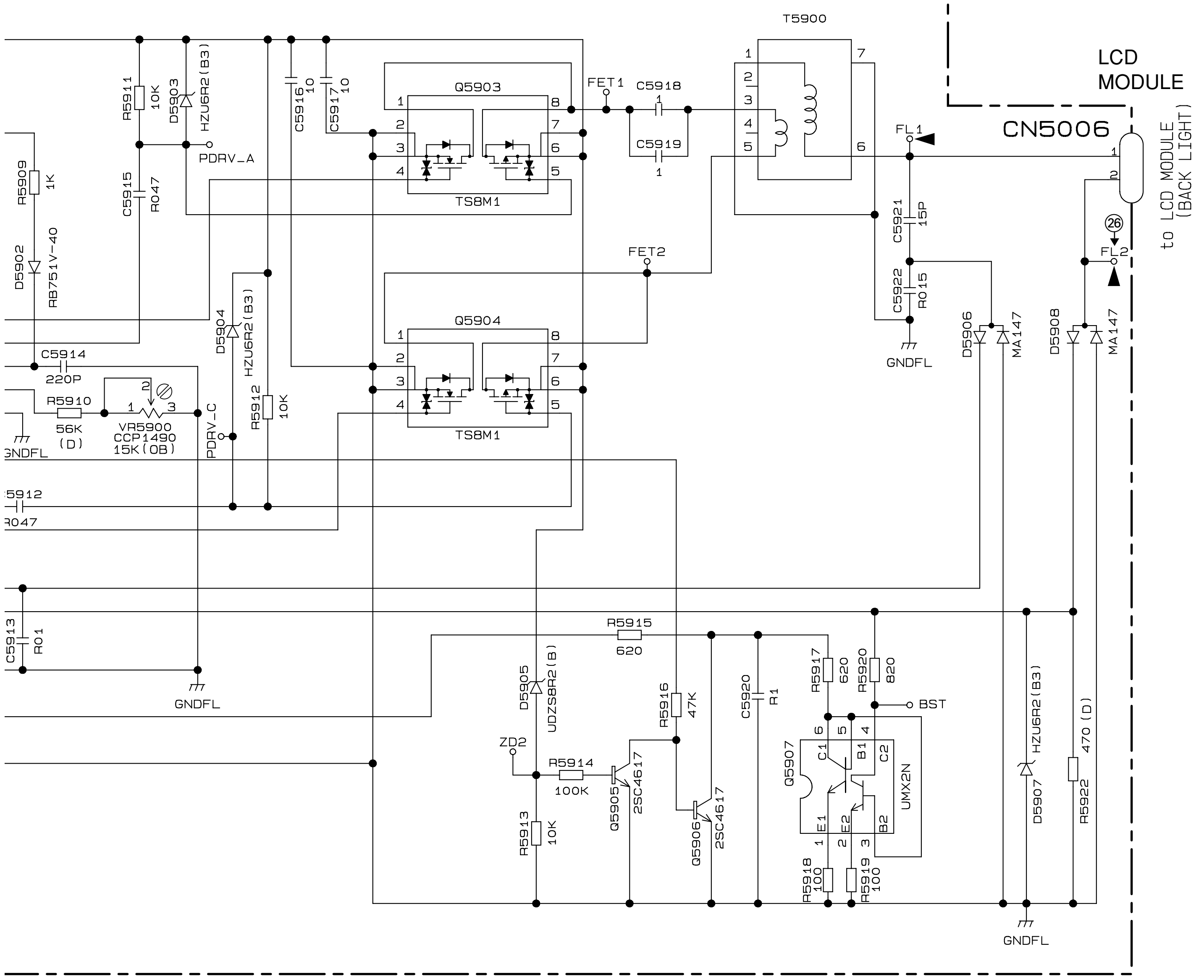
E

F



G2/2

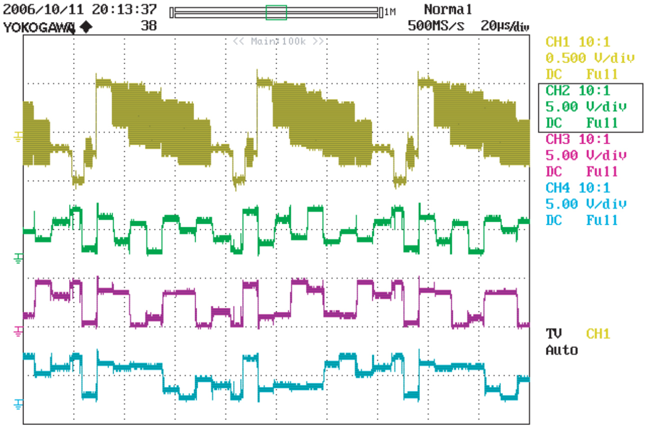
G 2/2 MONITOR UNIT (INVERTER)



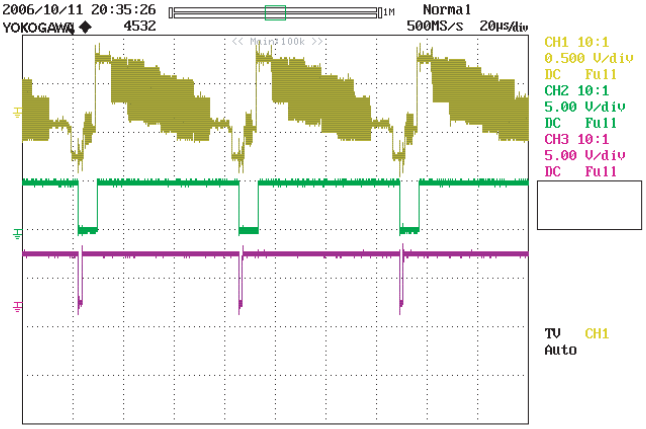
Waveforms

The encircled number denote measuring pointes in the circuit diagram.

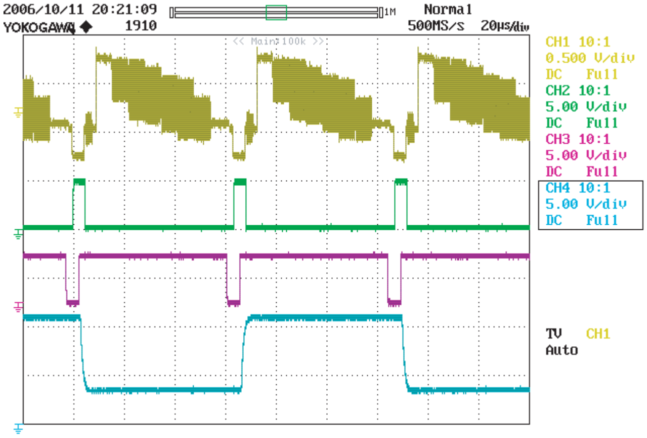
DVD TEST DISC : State of color bar display
① CH1 : MONVBS ③ CH3 : LCDR
② CH2 : LCDB ④ CH4 : LCDG



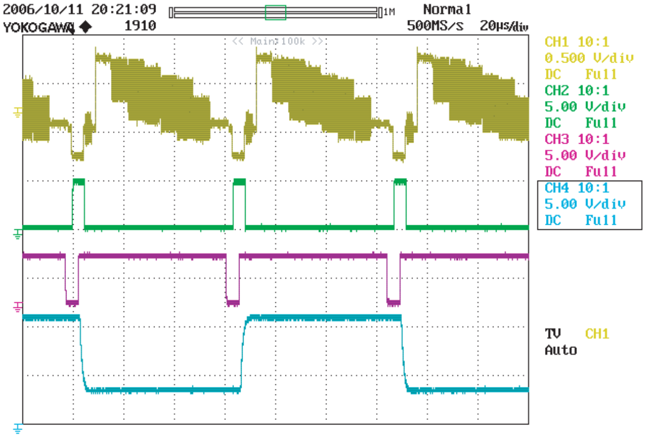
DVD TEST DISC : State of color bar display
① CH1 : MONVBS ⑪ CH3 : HSYNC
⑨ CH2 : SPIO



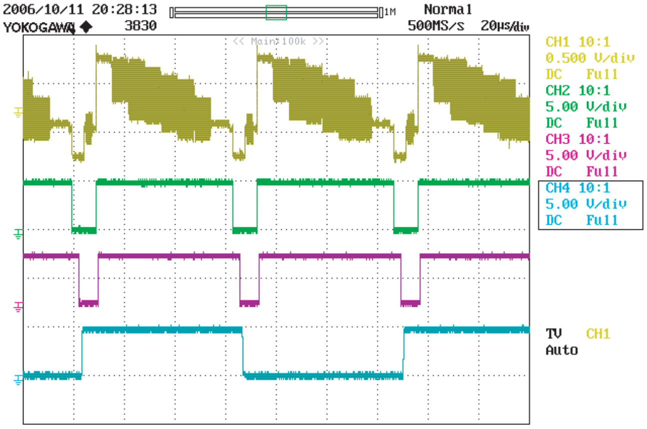
DVD TEST DISC : State of color bar display
① CH1 : MONVBS ⑥ CH3 : HSY
⑤ CH2 : SYNCCT ⑦ CH4 : COMS



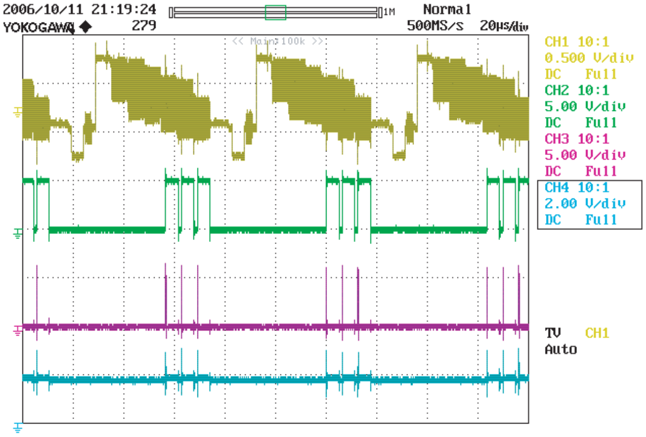
DVD TEST DISC : State of color bar display
① CH1 : MONVBS ⑬ CH3 : VSYNC
⑫ CH2 : SPS



DVD TEST DISC : State of color bar display
① CH1 : MONVBS ⑨ CH3 : SPIO
⑧ CH2 : CLS ⑩ CH4 : CTR

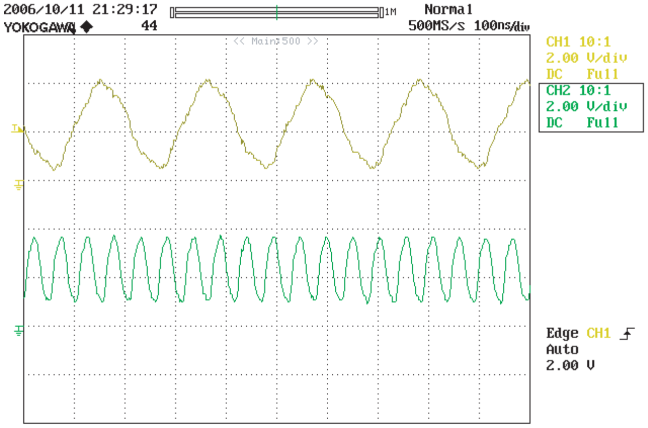


DVD TEST DISC : State of color bar display
① CH1 : MONVBS ⑮ CH3 : IOUT(C3)
⑭ CH2 : OSDOVR ⑯ CH4 : OSD RGB



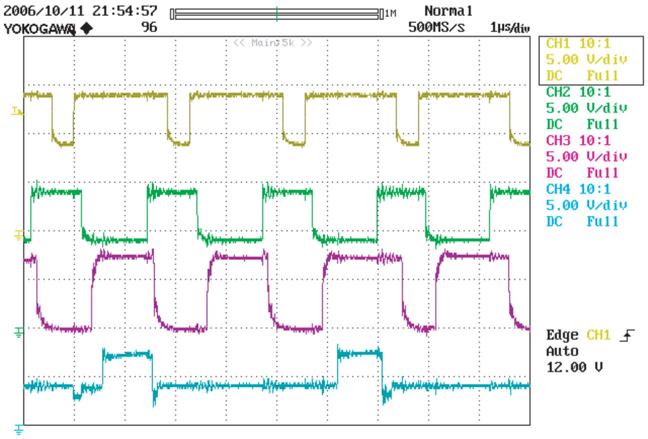
DVD TEST DISC : State of color bar display

⑰ CH1 : CLD
⑱ CH2 : DOCKI



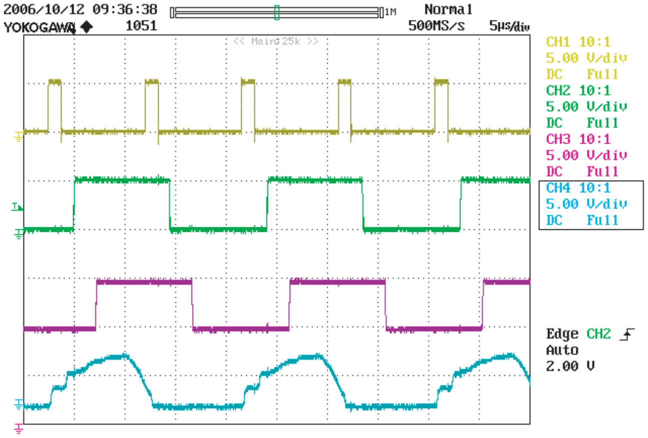
⑲ CH1 : OUT1
⑳ CH2 : OUT2

㉑ CH3 : OUT4
㉒ CH4 : OUT5

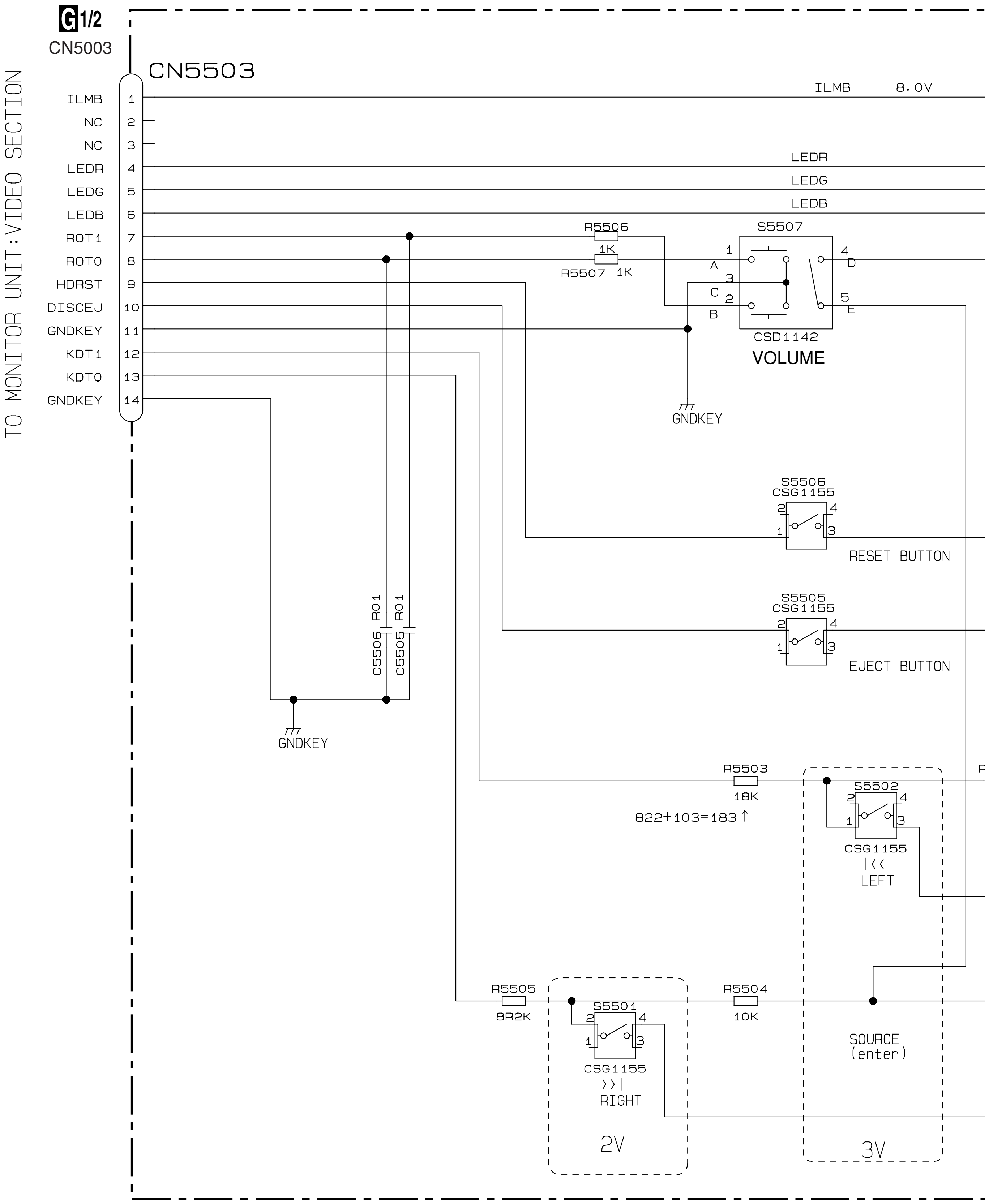


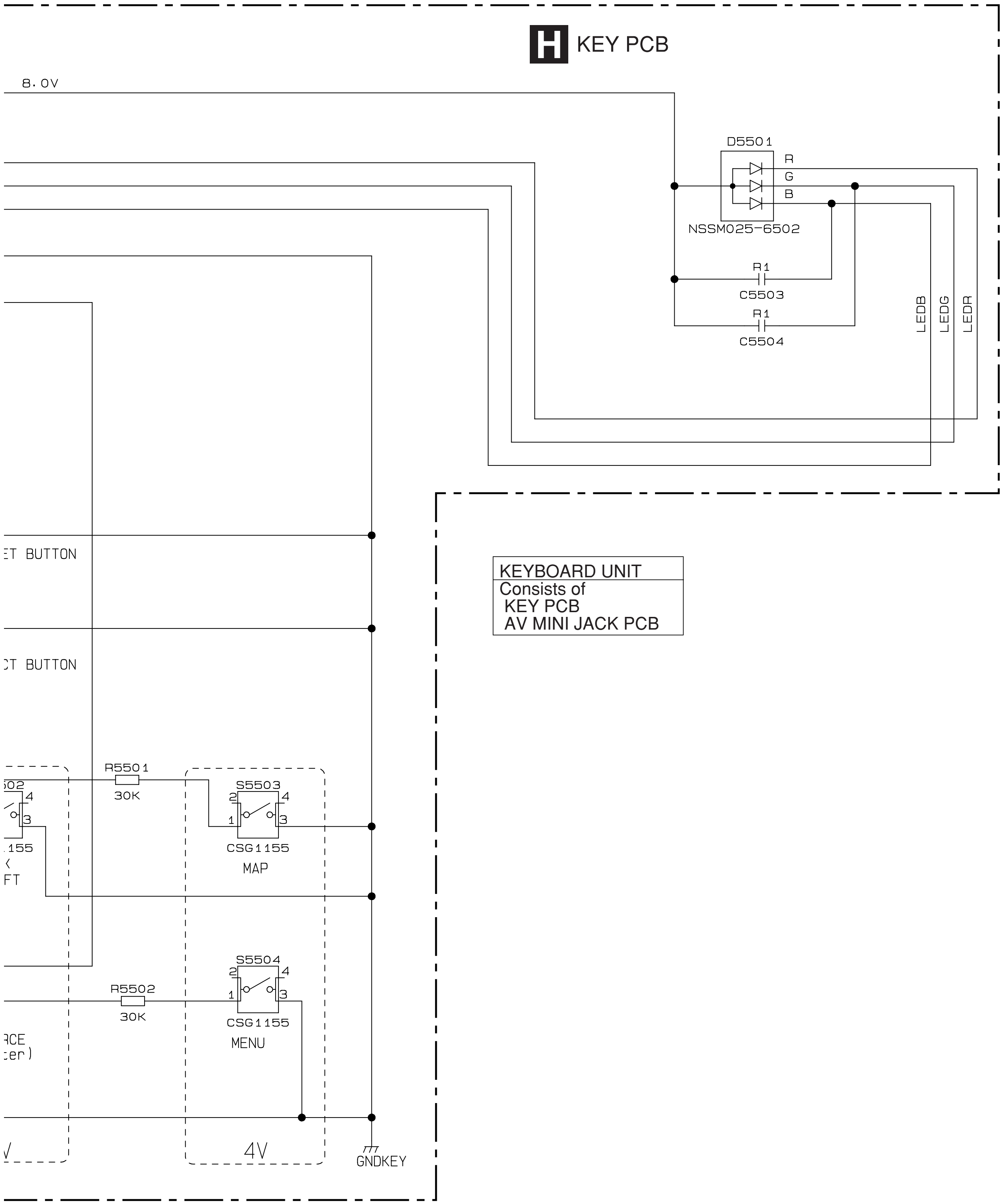
㉓ CH1 : INVPUL
㉔ CH2 : NDRV_B

㉕ CH3 : PDRV_C
㉖ CH4 : FL2

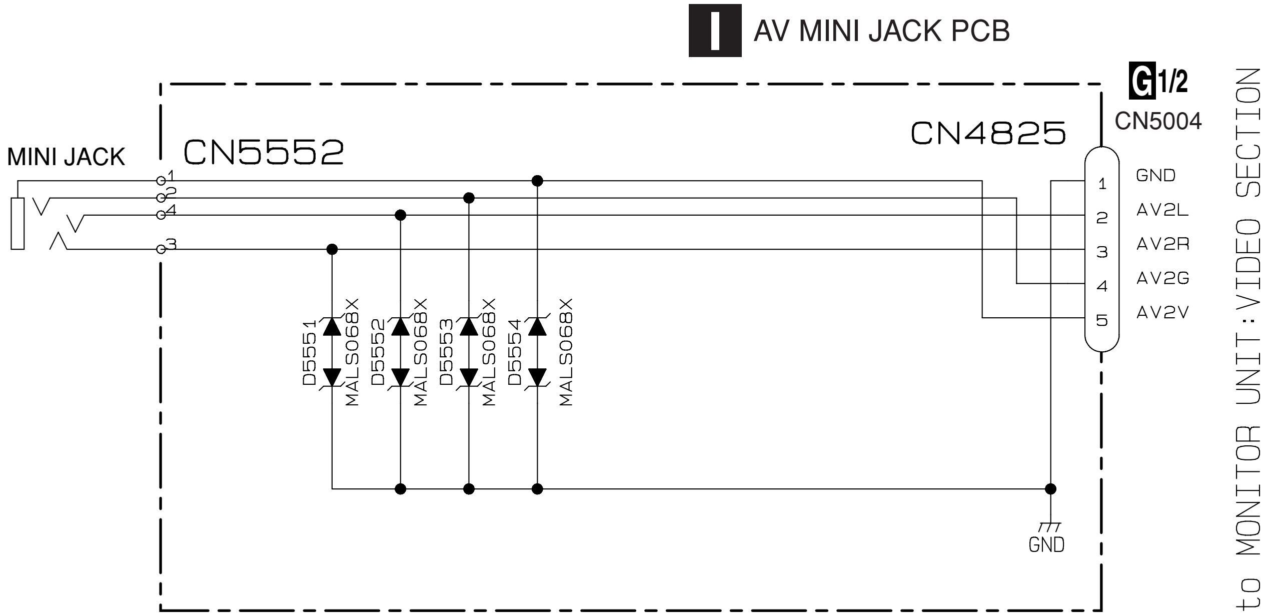


3.19 KEY PCB


G 1/2
CN5003
TO MONITOR UNIT:VIDEO SECTION
CN5503
ILMB 1
NC 2
NC 3
LEDR 4
LEDG 5
LEDB 6
ROT1 7
ROT0 8
HDRST 9
DISCEJ 10
GNDKEY 11
KDT1 12
KDT0 13
GNDKEY 14
ILMB 8.0V
LEDR
LEDG
LEDB
R5506
1K
R5507 1K
S5507
1
A
3
C
2
B
4
D
5
E
CSD1142
VOLUME
GNDKEY
S5506
CSG1155
RESET BUTTON
S5505
CSG1155
EJECT BUTTON
R01
R01
C5506
C5505
GNDKEY
R5503
18K
822+103=183↑
S5502
CSG1155
|‹‹
LEFT
R5505
8R2K
S5501
CSG1155
››|
RIGHT
R5504
10K
SOURCE
(enter)
2V
3V


H KEY PCB
8.0V
D5501
R
G
B
NSSM025-6502
R1
C5503
R1
C5504
LEDB
LEDG
LEDR
ET BUTTON
CT BUTTON
R5501
30K
S5503
2
4
1
3
CSG1155
MAP
502
4
3
155
FT
S5504
2
4
1
3
R5502
30K
CSG1155
MENU
RCE
cer)
V
4V
GNDKEY
KEYBOARD UNIT
Consists of
KEY PCB
AV MINI JACK PCB

3.20 AV MINI JACK PCB



KEYBOARD UNIT
Consists of KEY PCB AV MINI JACK PCB

I

A

B

C

D

E

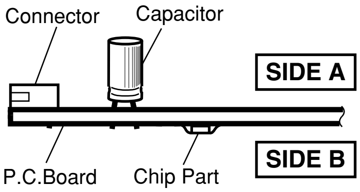
F

4. PCB CONNECTION DIAGRAM

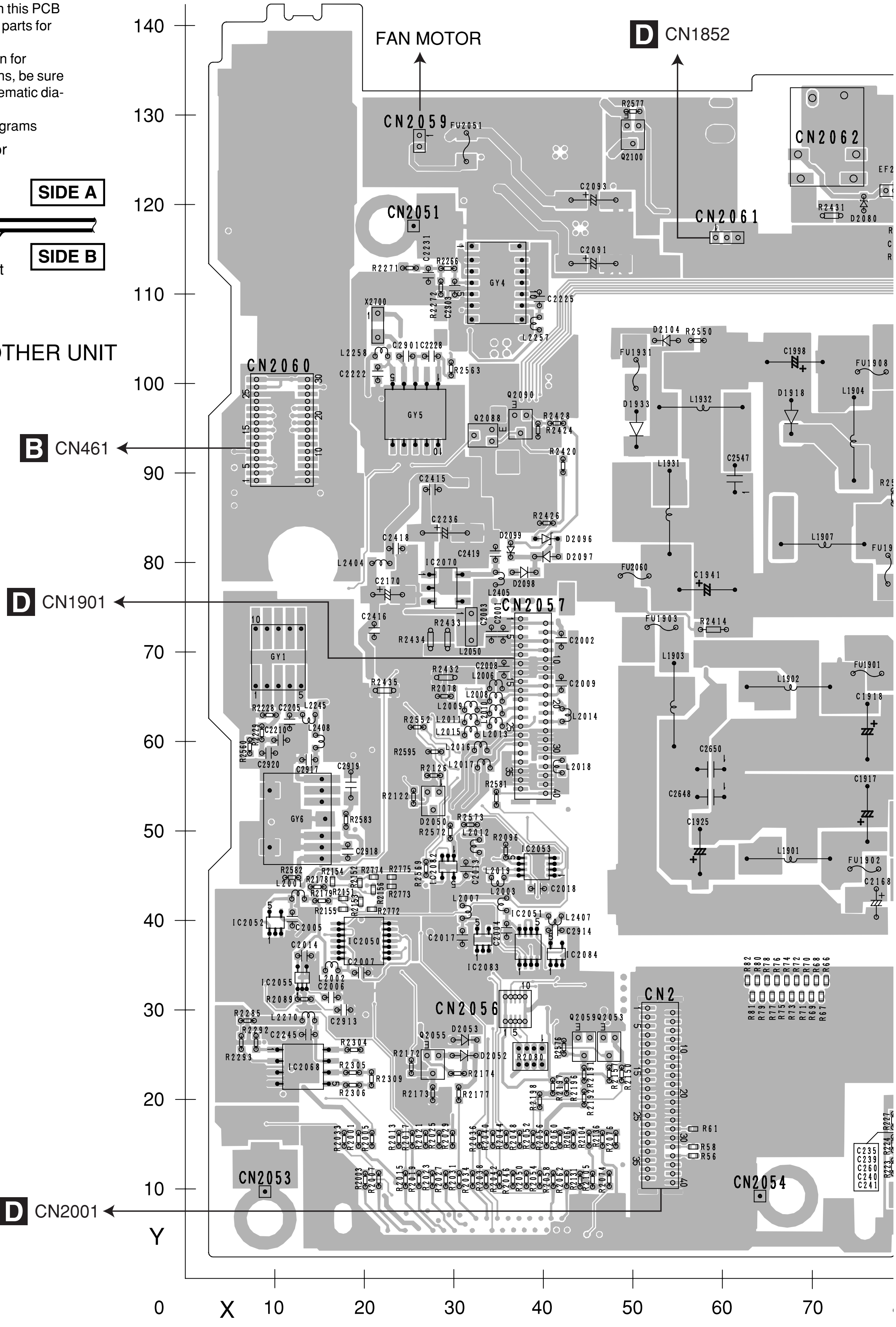
4.1 NAVI MOTHER UNIT

NOTE FOR PCB DIAGRAMS

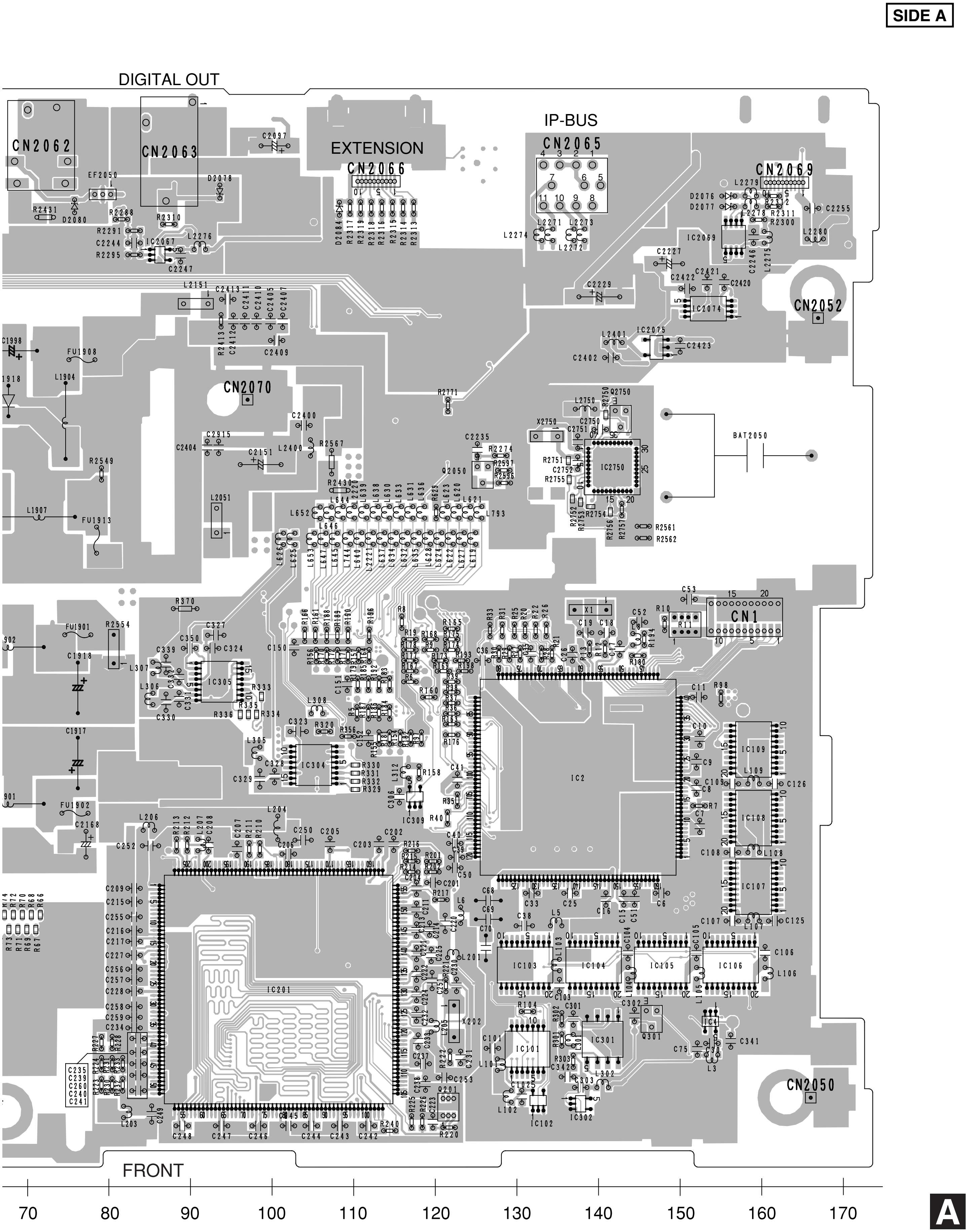
1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



A NAVI MOTHER UNIT



A


SIDE A
A
B
C
D
E
F
DIGITAL OUT
CN2062
CN2063
EXTENSION
CN2066
IP-BUS
CN2065
CN2069
CN2052
CN2070
BAT2050
IC2750
CN1
IC2
IC305
IC304
IC109
IC108
IC107
IC103
IC104
IC105
IC106
IC201
IC101
IC301
IC102
IC302
CN2050
FRONT
70
80
90
100
110
120
130
140
150
160
170
A

A

A NAVI MOTHER UNIT

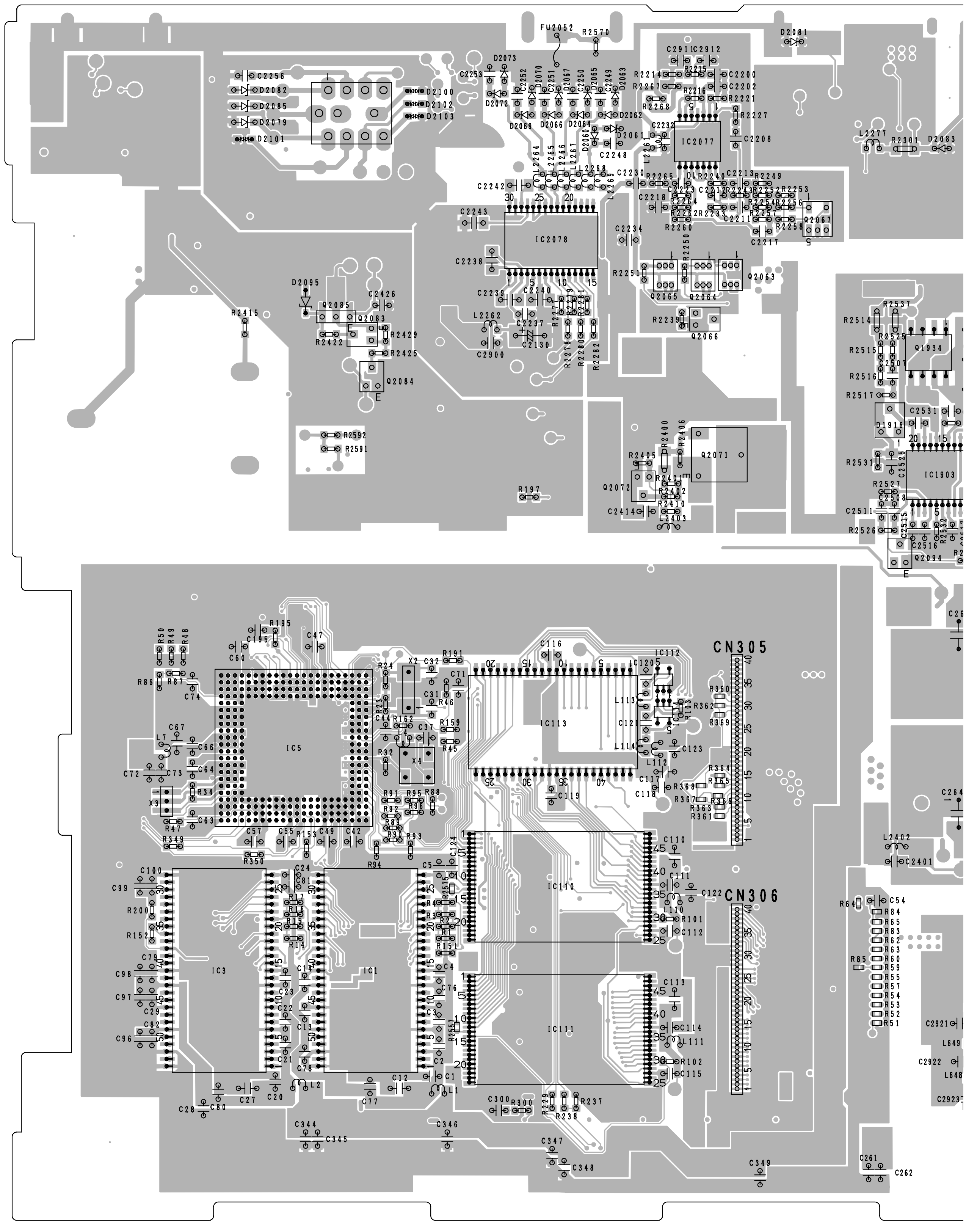
B

C

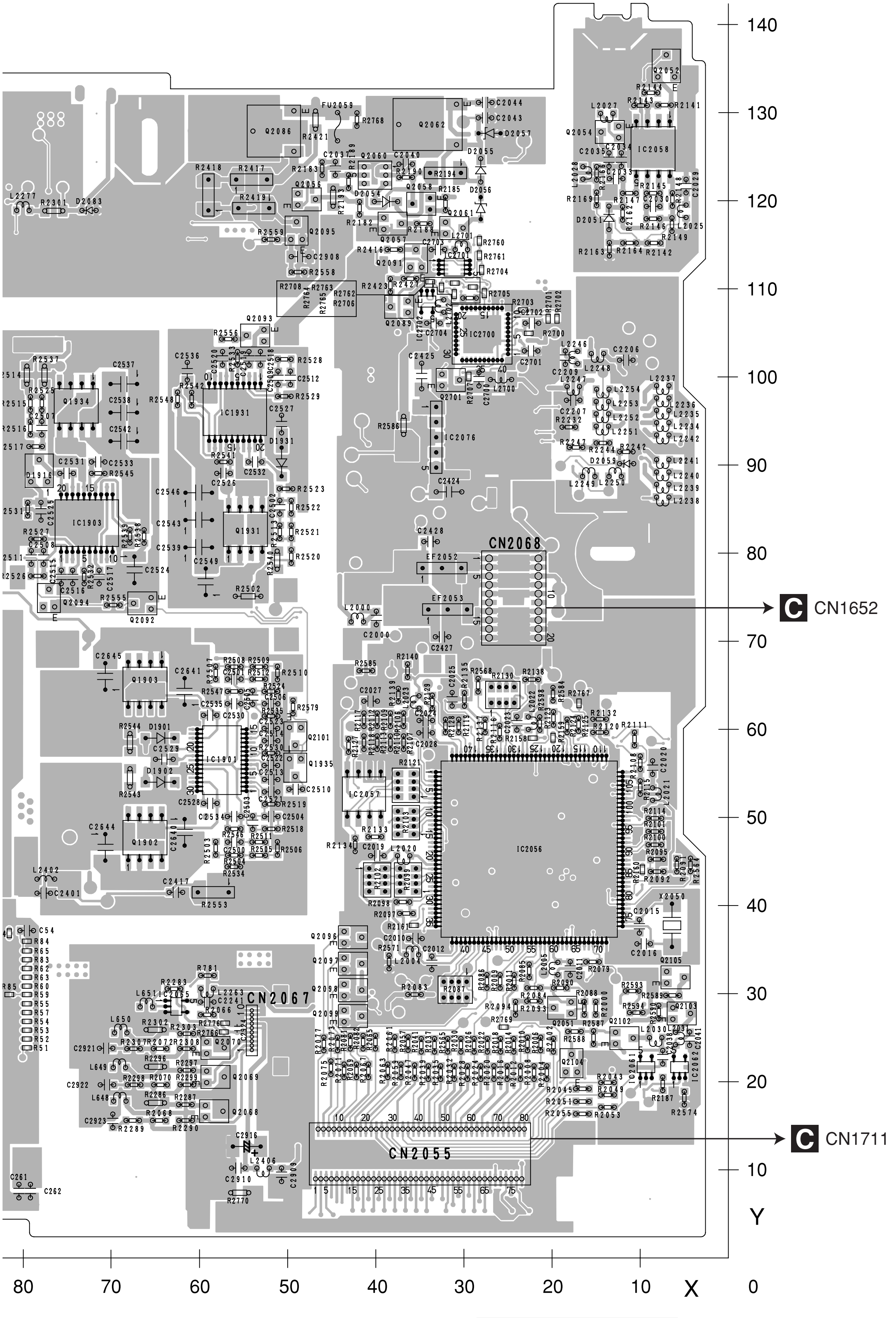
D

E

F



SIDE B

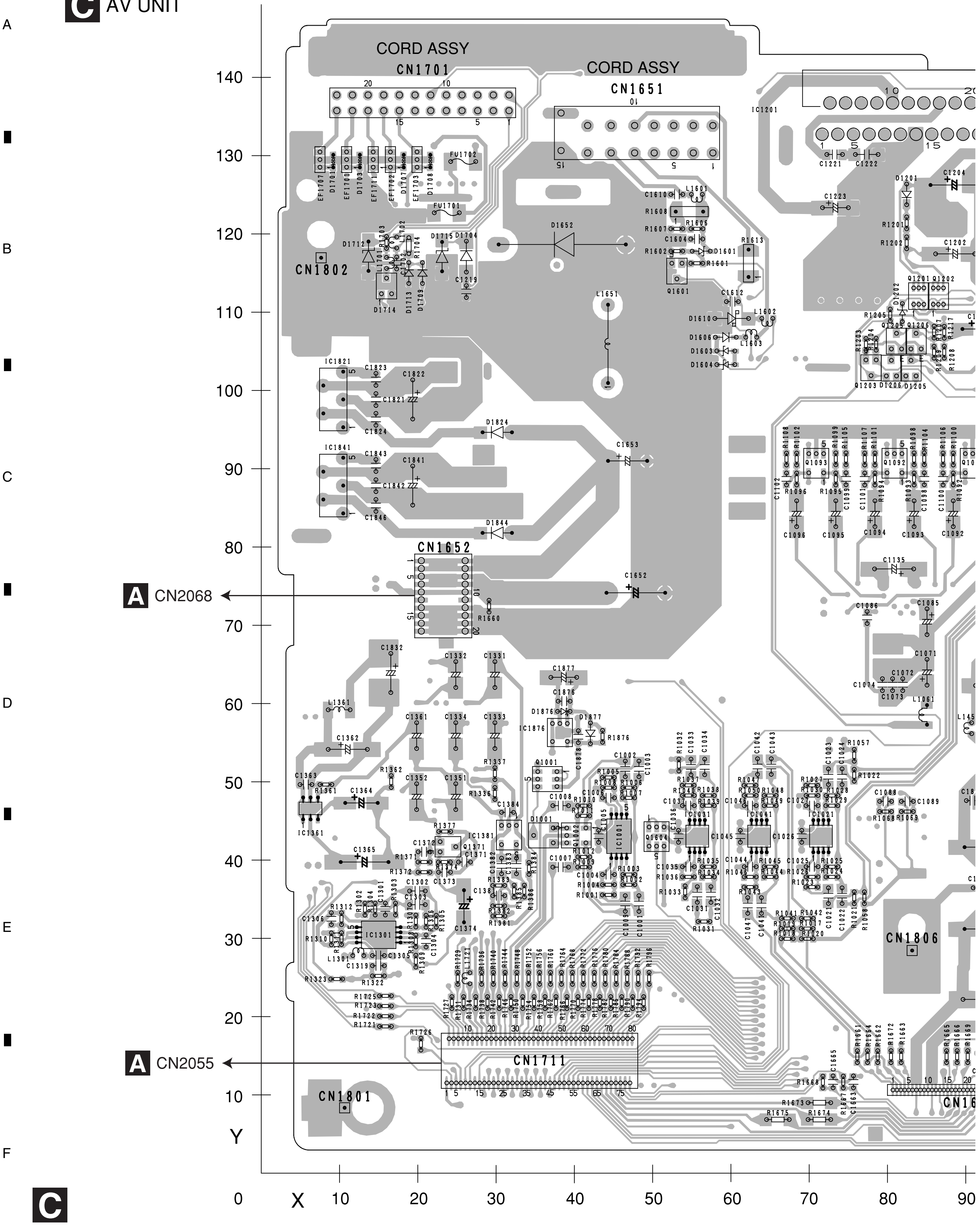


A
B
C
D
E
F

A

4.2 AV UNIT

C AV UNIT



SIDE A

A

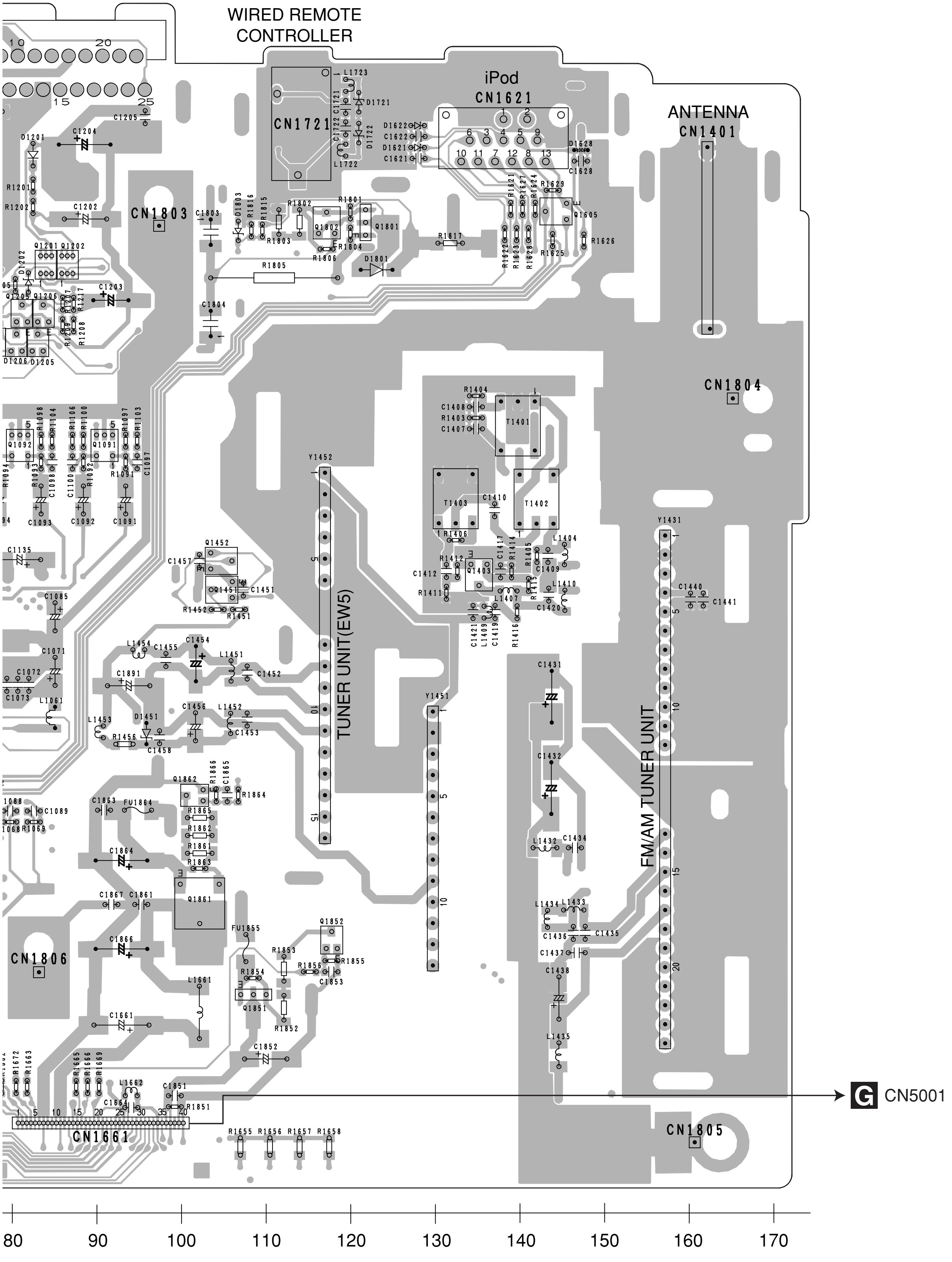
B

C

D

E

F



C

C AV UNIT

A

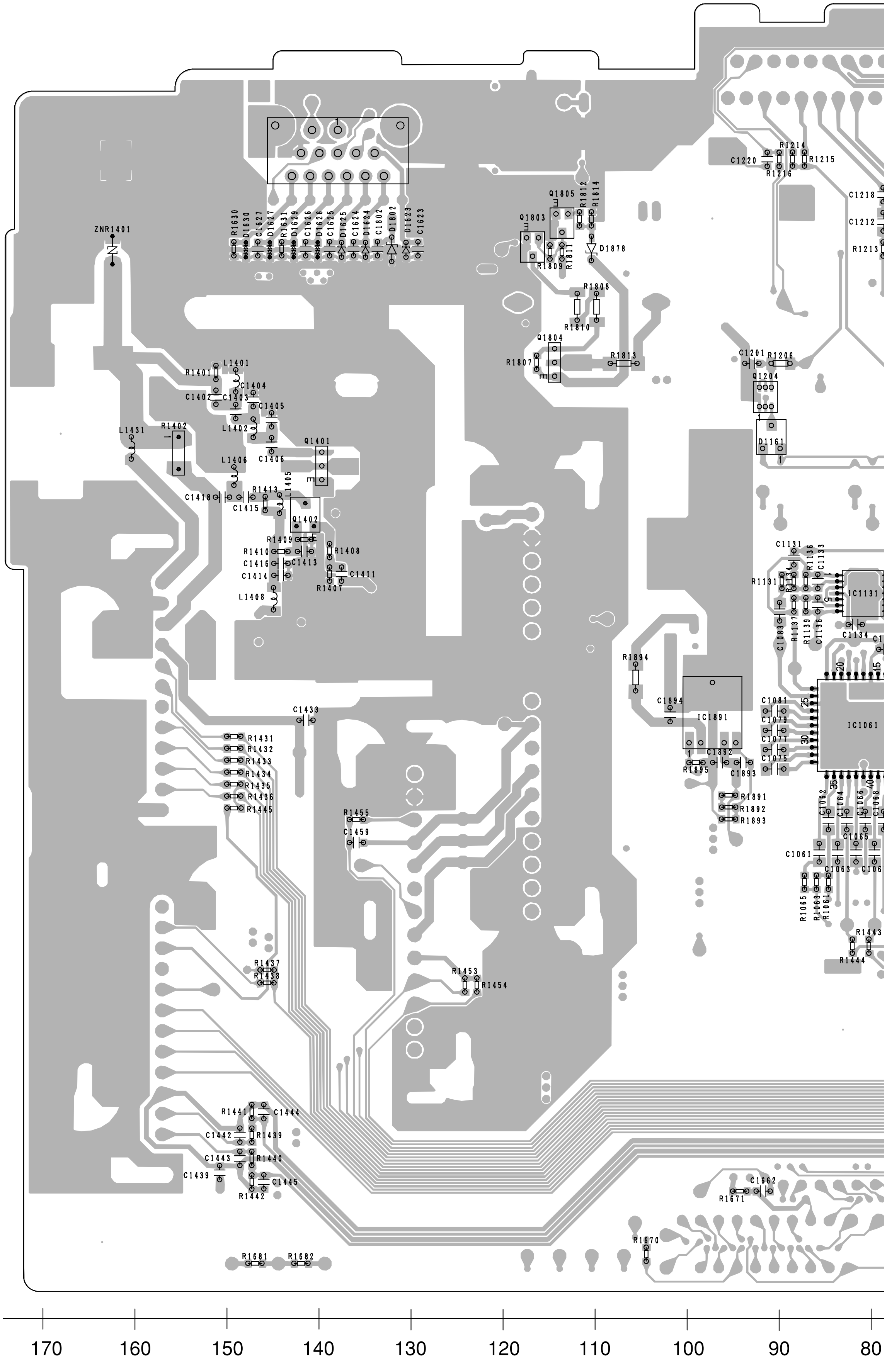
B

C

D

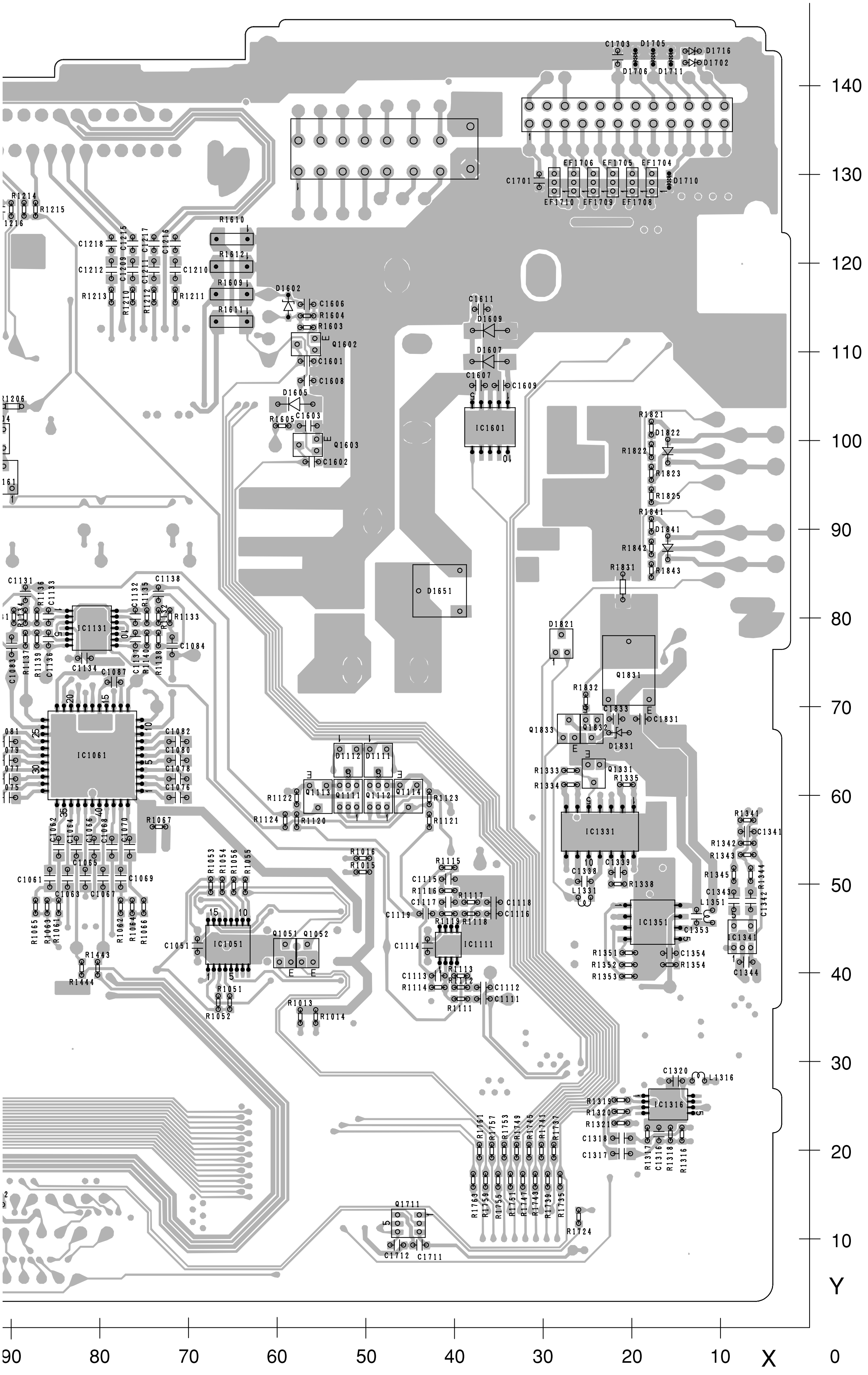
E

F



SIDE B

A



B

C

D

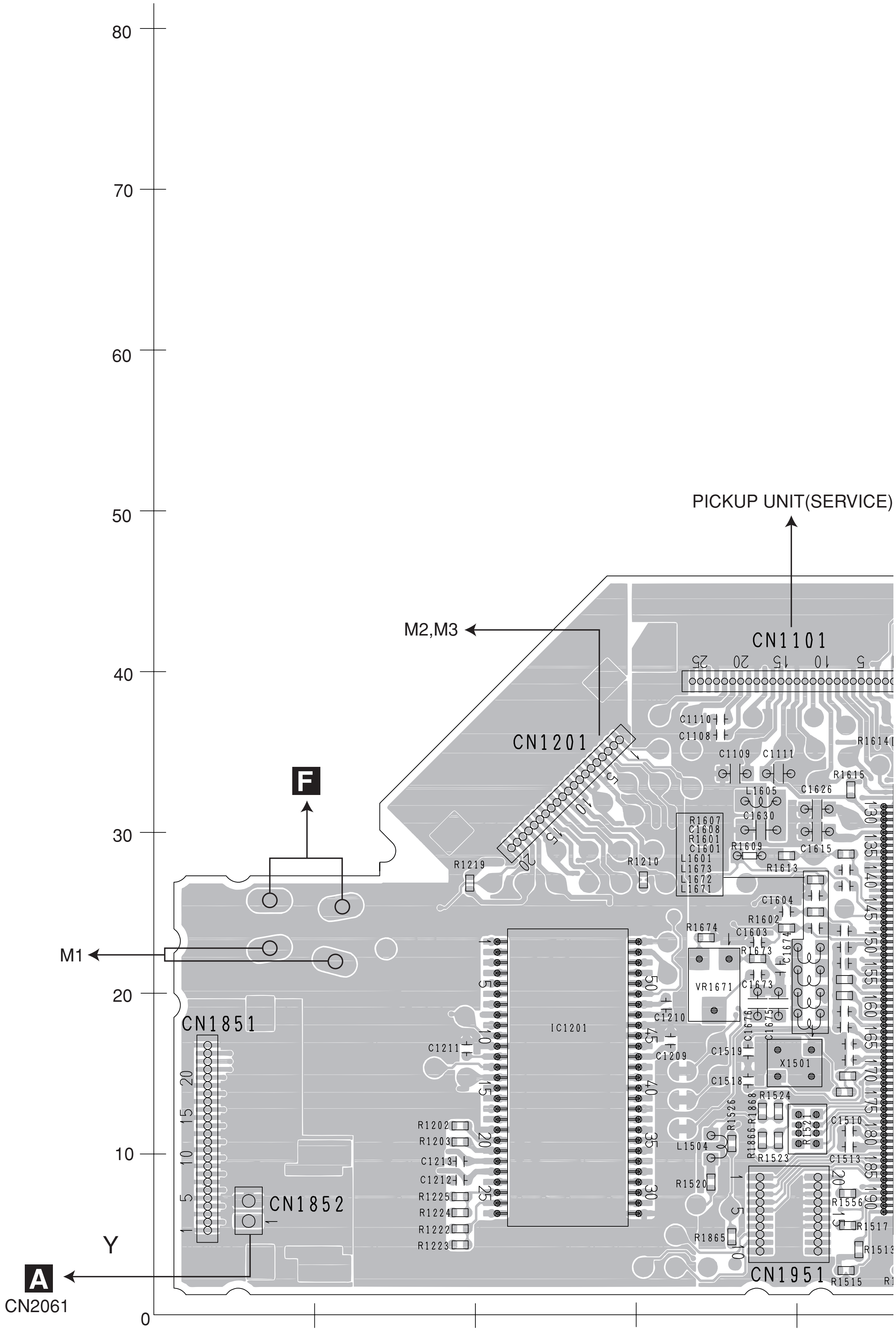
E

F

C

4.3 DVD CORE UNIT

D DVD CORE UNIT



SIDE A

A

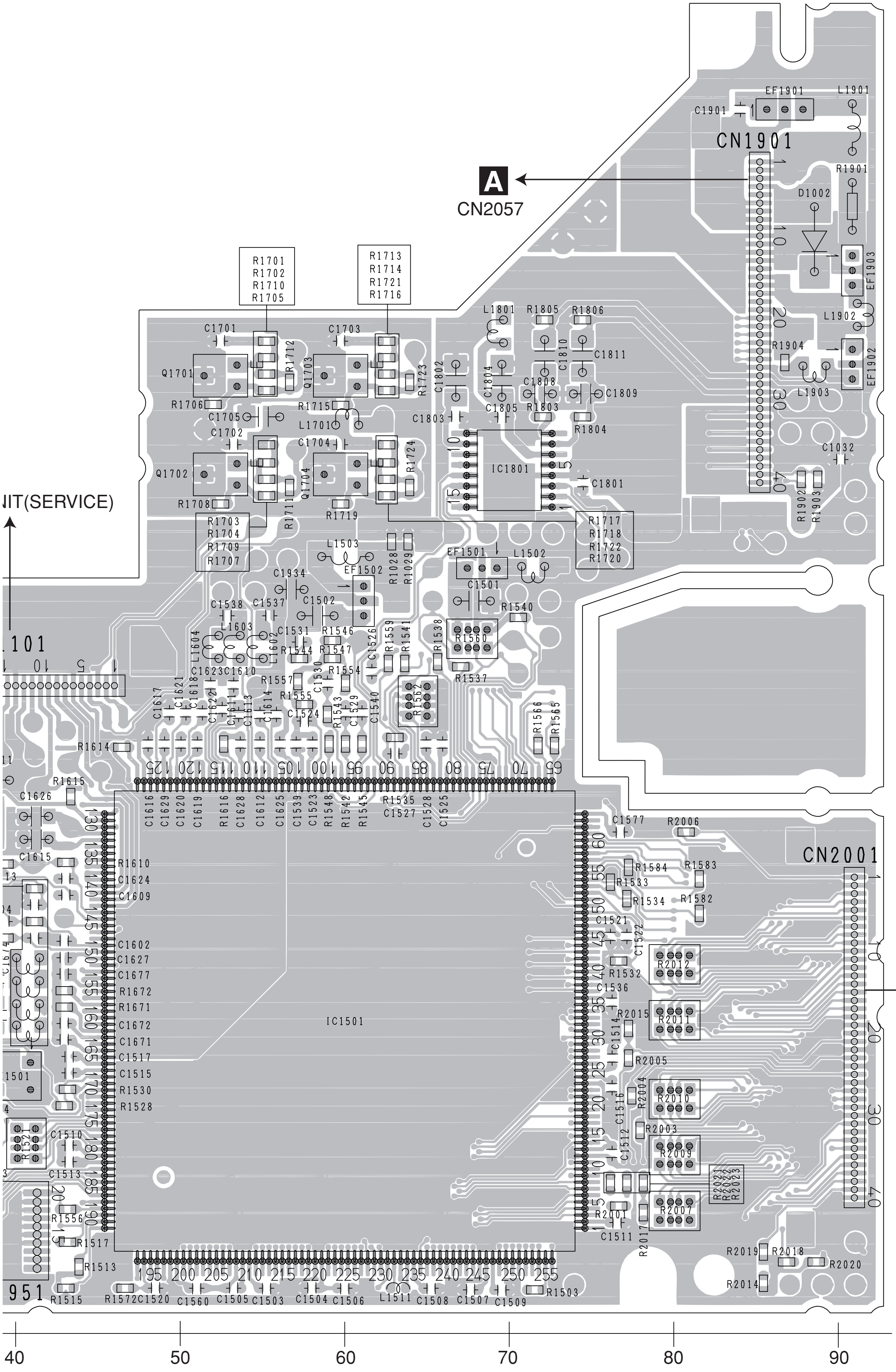
B

C

D

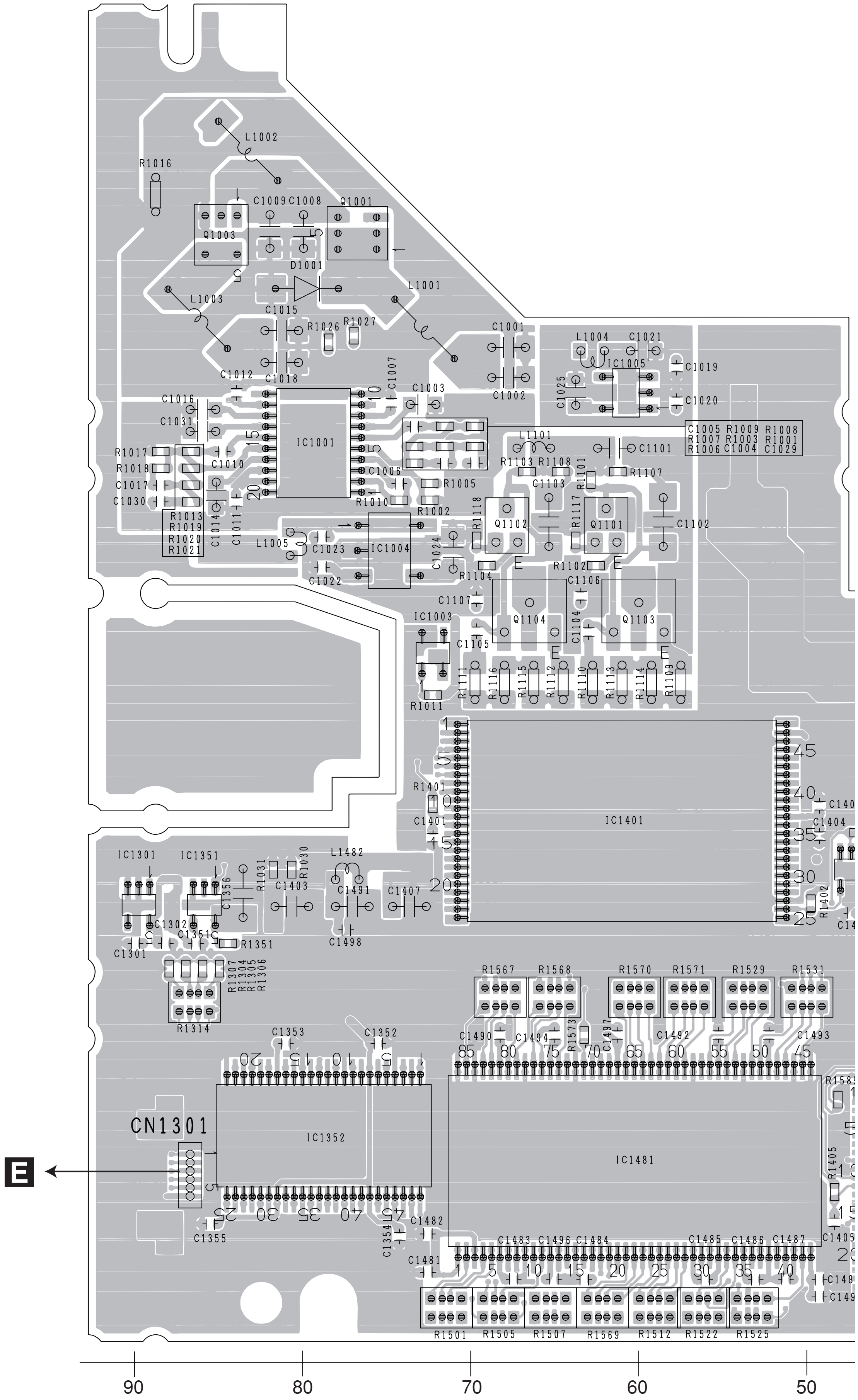
E

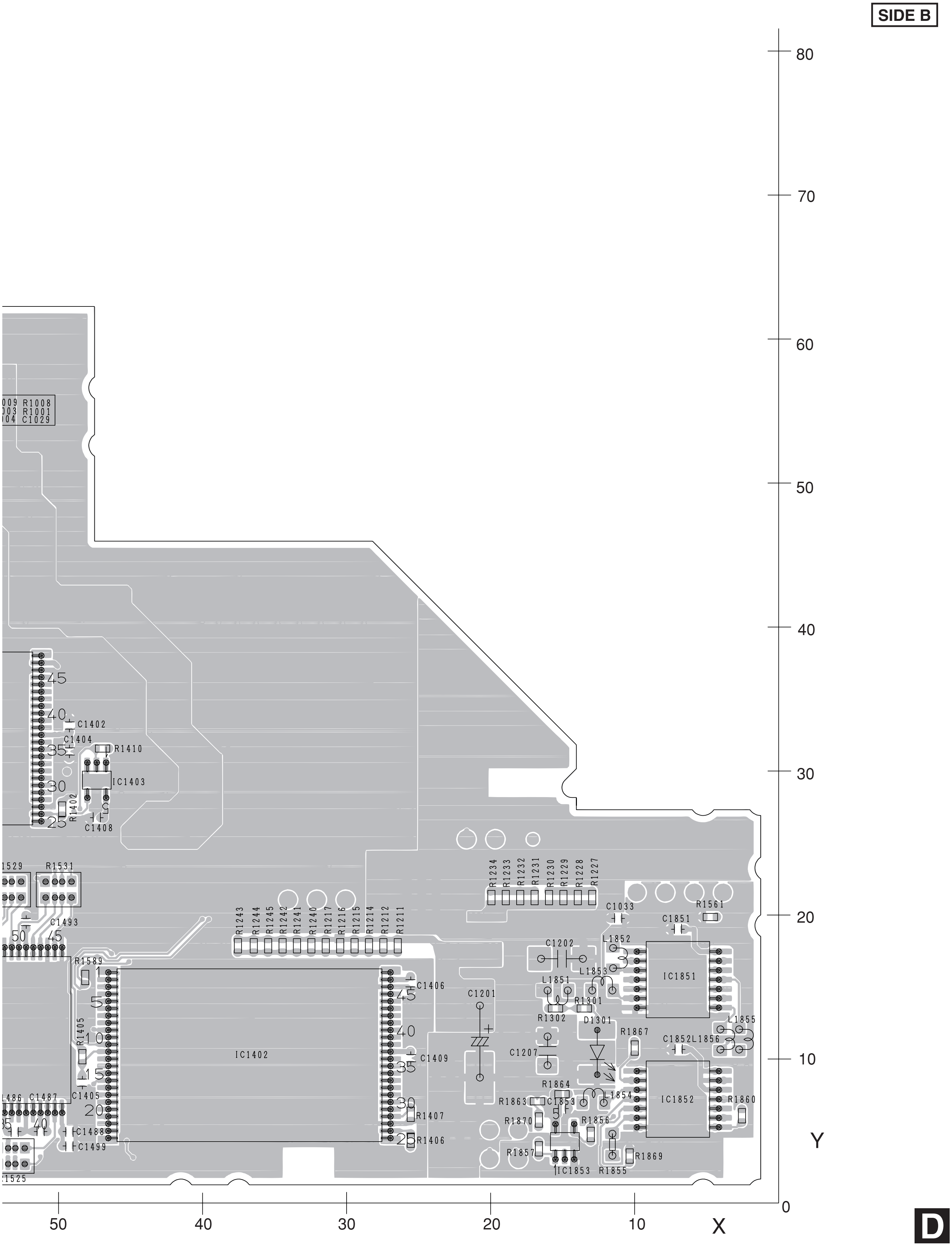
F



D

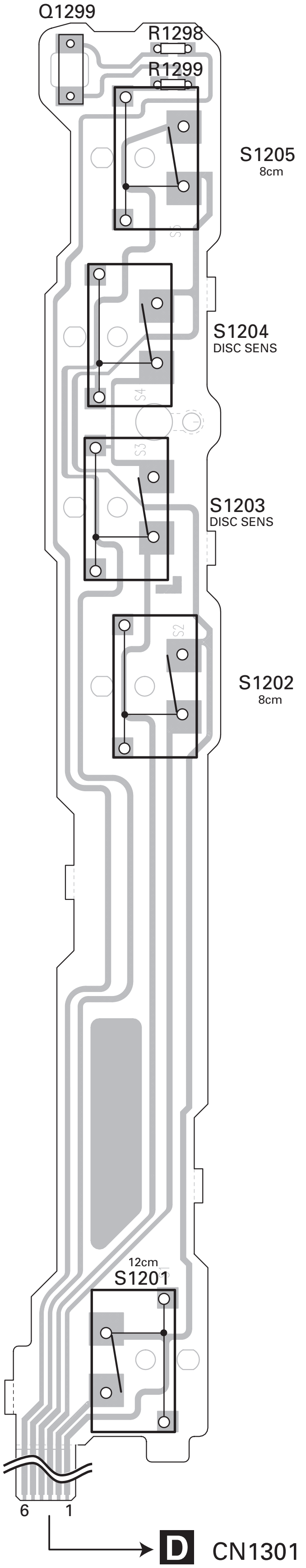
D DVD CORE UNIT



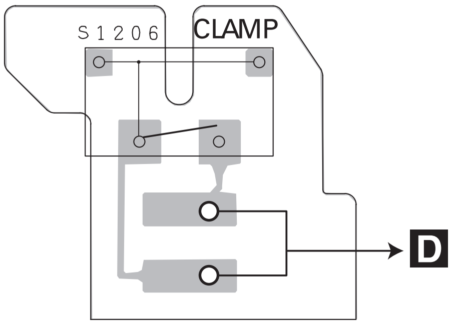

SIDE B
80
70
60
50
40
30
20
10
0
Y
X
50
40
30
20
10
R1008
R1001
C1029
C1402
C1404
R1410
IC1403
R1402
C1408
R1529
R1531
C1493
R1589
R1405
C1405
C1486
C1487
C1488
C1499
C1525
IC1402
C1406
C1409
R1407
R1406
R1243
R1244
R1245
R1242
R1241
R1240
R1217
R1216
R1215
R1214
R1212
R1211
R1234
R1233
R1232
R1231
R1230
R1229
R1228
R1227
C1033
R1561
C1851
L1852
C1202
L1853
IC1851
C1201
L1851
R1301
R1302
D1301
R1867
L1855
C1852
L1856
C1207
R1864
R1863
C1853
L1854
IC1852
R1860
R1870
R1856
R1857
IC1853
R1855
R1869

4.4 COMPOUND UNIT(A), COMPOUND UNIT(B)

E COMPOUND UNIT(A)



F COMPOUND UNIT(B)

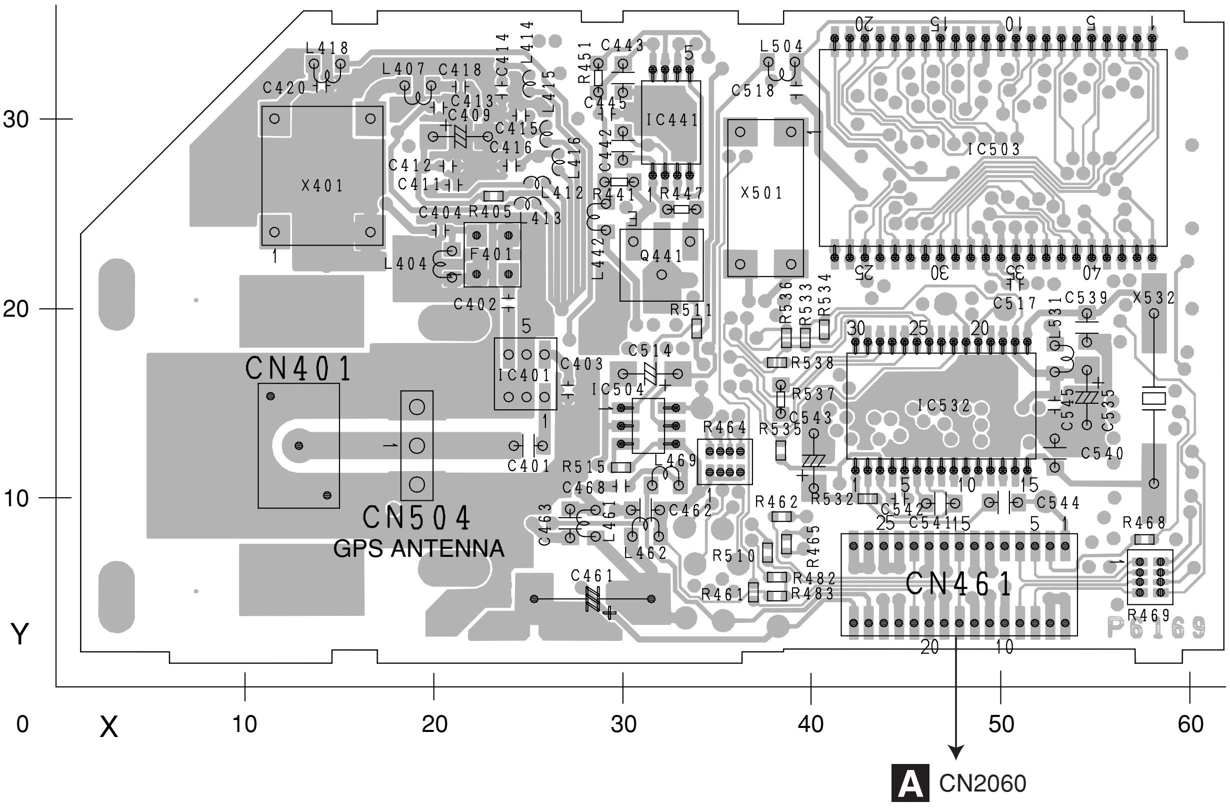


E F

4.5 GPS UNIT

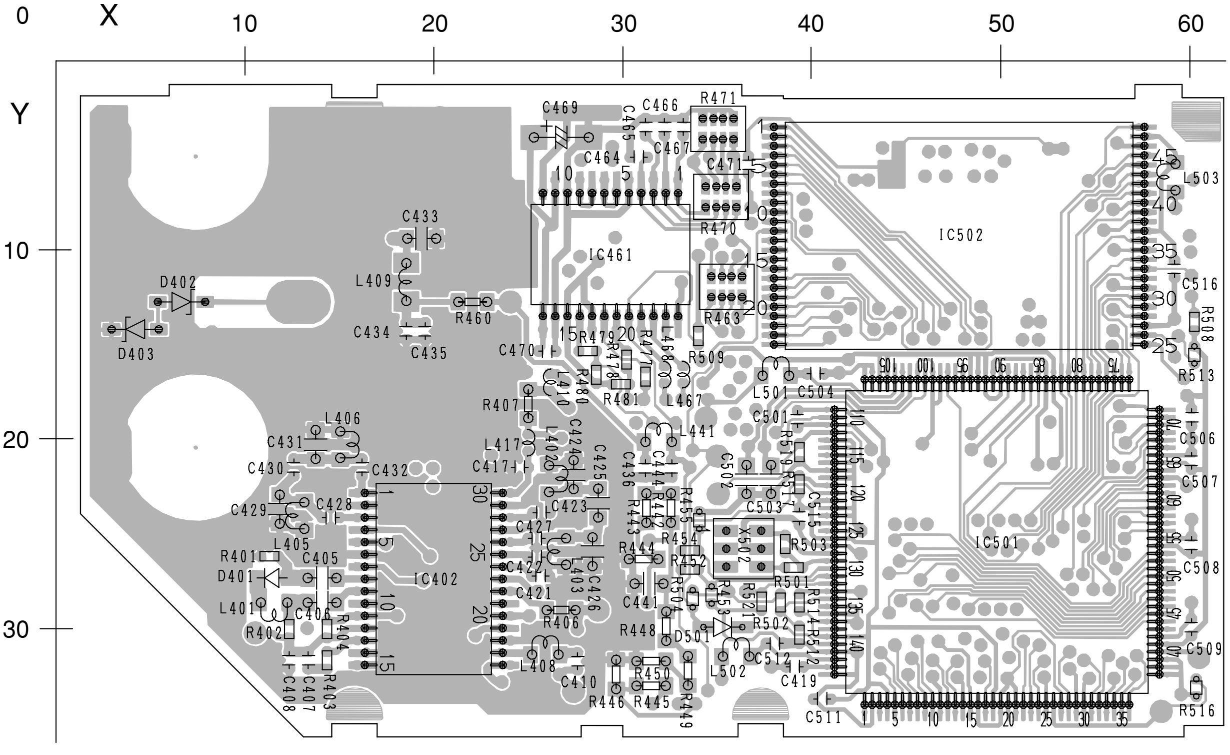
B GPS UNIT

SIDE A



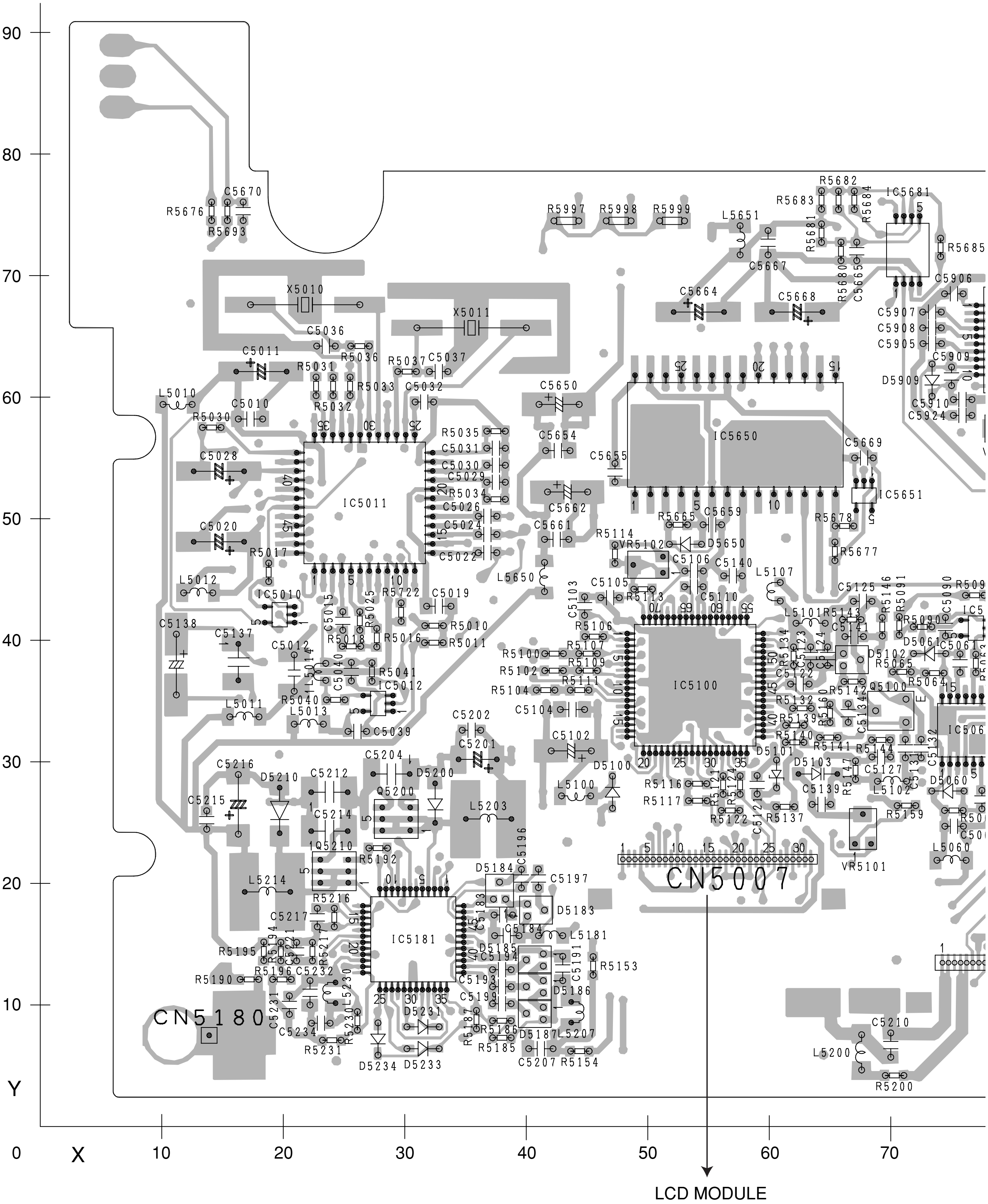
B GPS UNIT

SIDE B

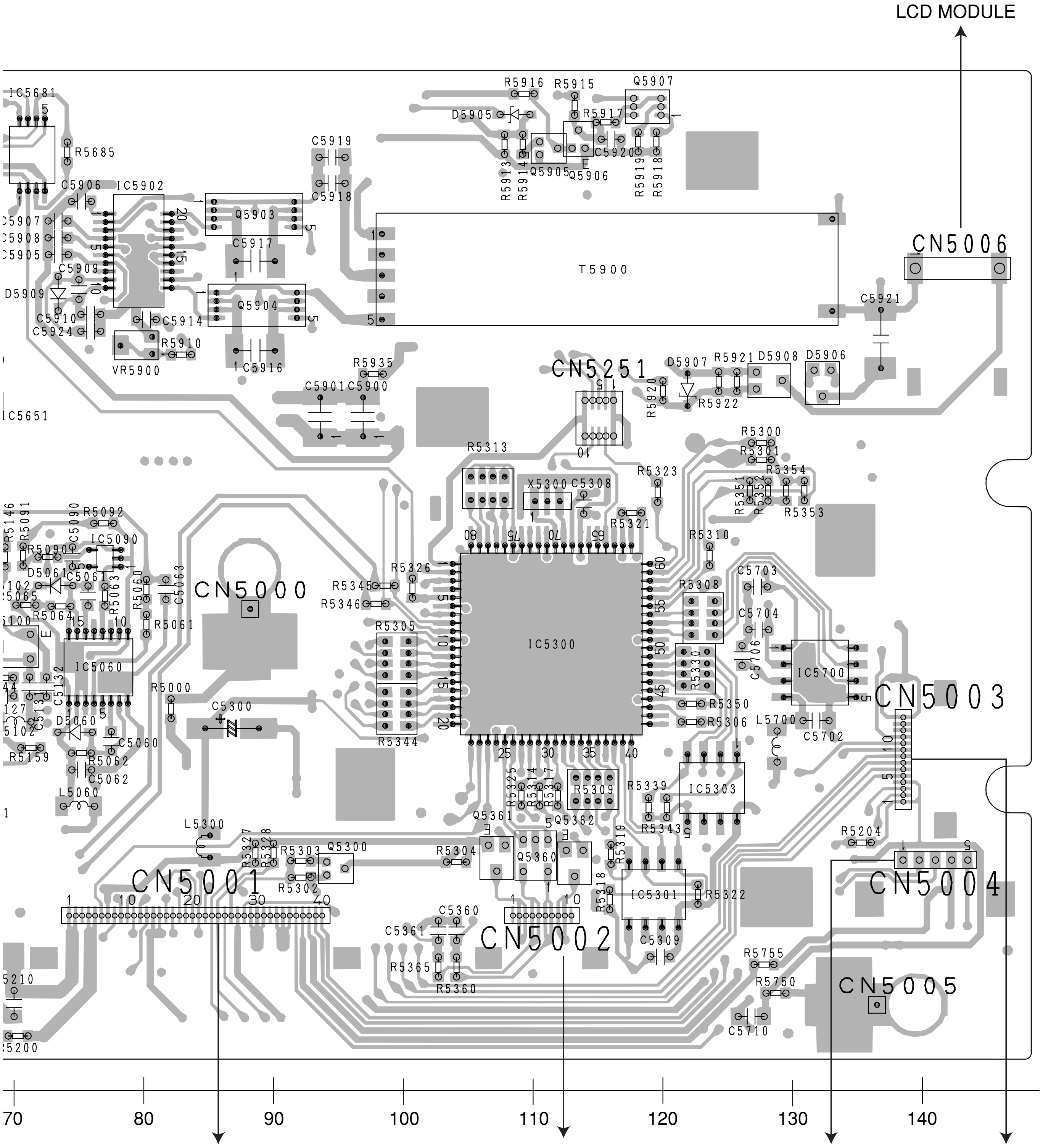


4.6 MONITOR UNIT

G MONITOR UNIT

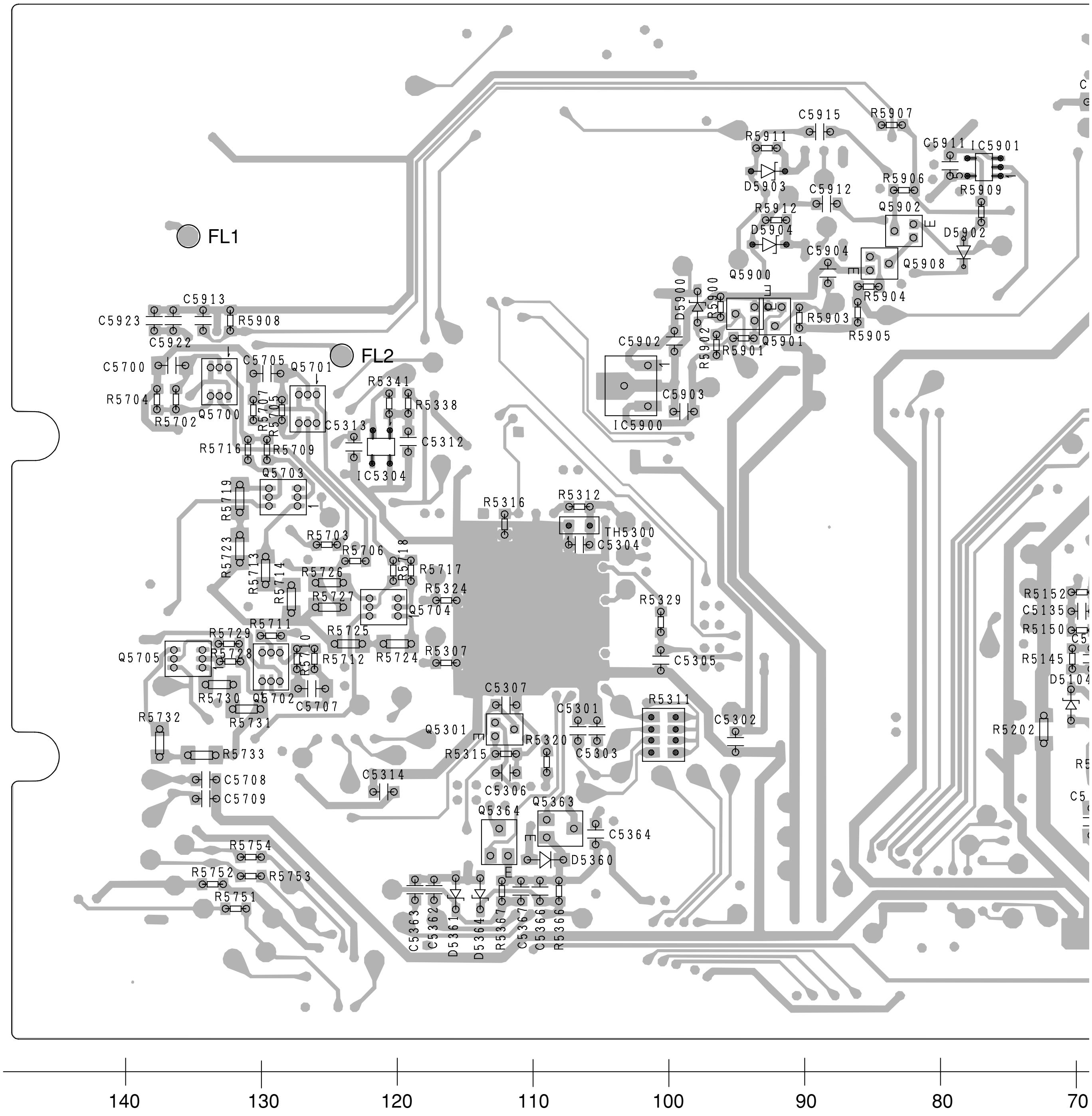


SIDE A

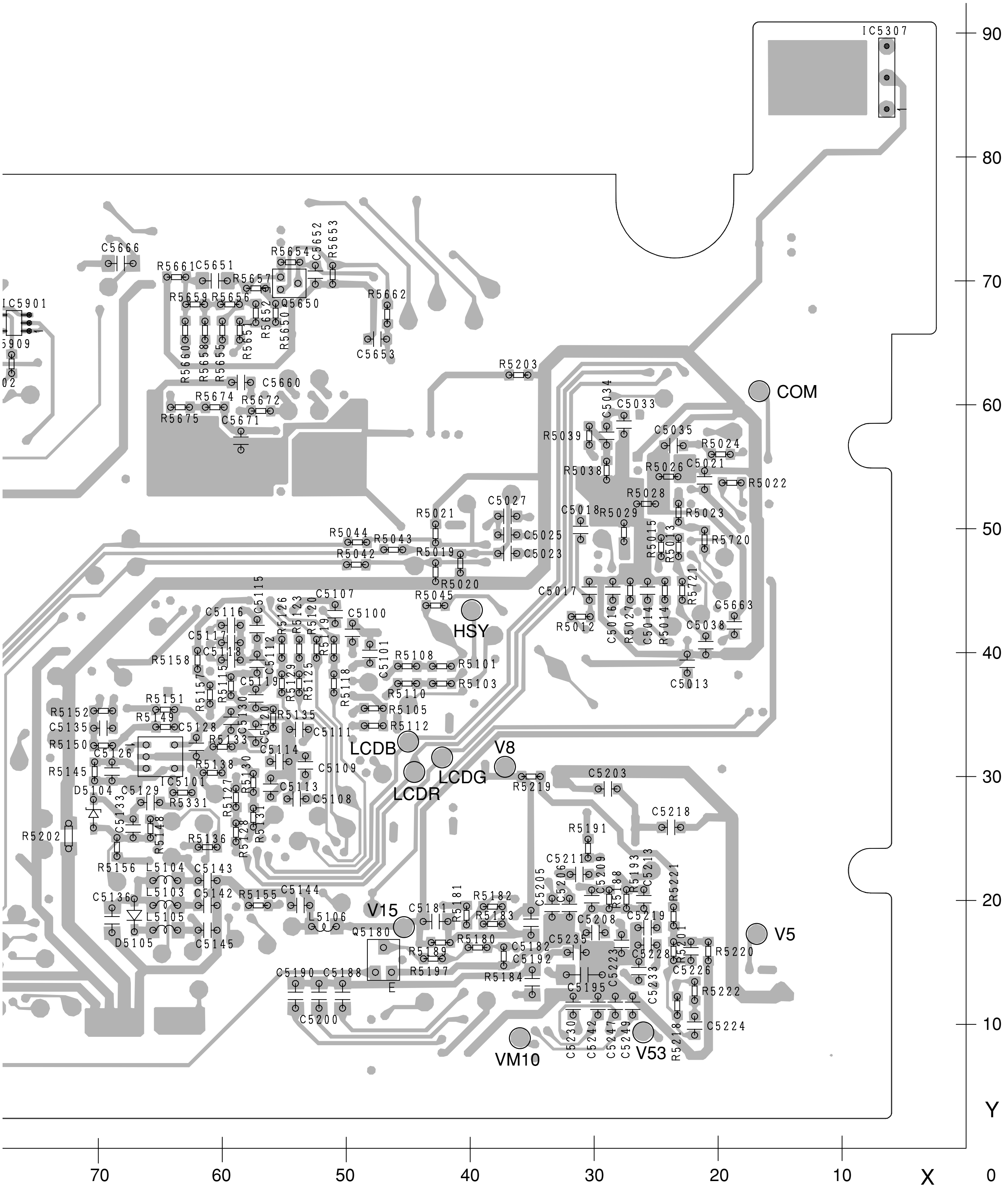

LCD MODULE
CN5006
T5900
IC5681
R5685
C5906
IC5902
C5907
C5908
C5905
C5909
D5909
C5910
C5924
C5914
R5910
VR5900
Q5903
Q5904
C5917
C5916
C5919
C5918
R5916
R5915
Q5907
D5905
R5917
C5920
R5913
R5914
Q5905
Q5906
R5919
R5918
C5921
R5935
C5901
C5900
CN5251
D5907
R5921
D5908
D5906
R5920
R5922
IC5651
R5313
X5300
C5308
R5323
R5300
R5301
R5354
R5351
R5352
R5353
R5321
R5310
R5092
C5090
IC5090
R5146
R5091
R5090
D5061
C5061
R5063
R5060
C5063
R5061
R5064
R5065
IC5060
C5132
D5060
C5060
R5062
C5062
L5060
R5159
CN5000
R5345
R5346
R5326
R5305
R5344
R5000
C5300
IC5300
R5308
C5703
C5704
C5706
IC5700
R5330
R5350
R5306
L5700
C5702
CN5003
R5325
R5314
R5317
R5309
R5339
IC5303
R5343
Q5361
Q5362
Q5360
R5319
R5318
IC5301
R5322
C5309
L5300
R5327
R5328
R5303
Q5300
R5302
R5304
CN5001
C5360
C5361
R5365
R5360
CN5002
R5204
CN5004
R5755
R5750
CN5005
C5710
R5210
R5200
70
80
90
100
110
120
130
140
C CN1661
TOUCH PANEL
I CN4825
H CN5503

G

G MONITOR UNIT

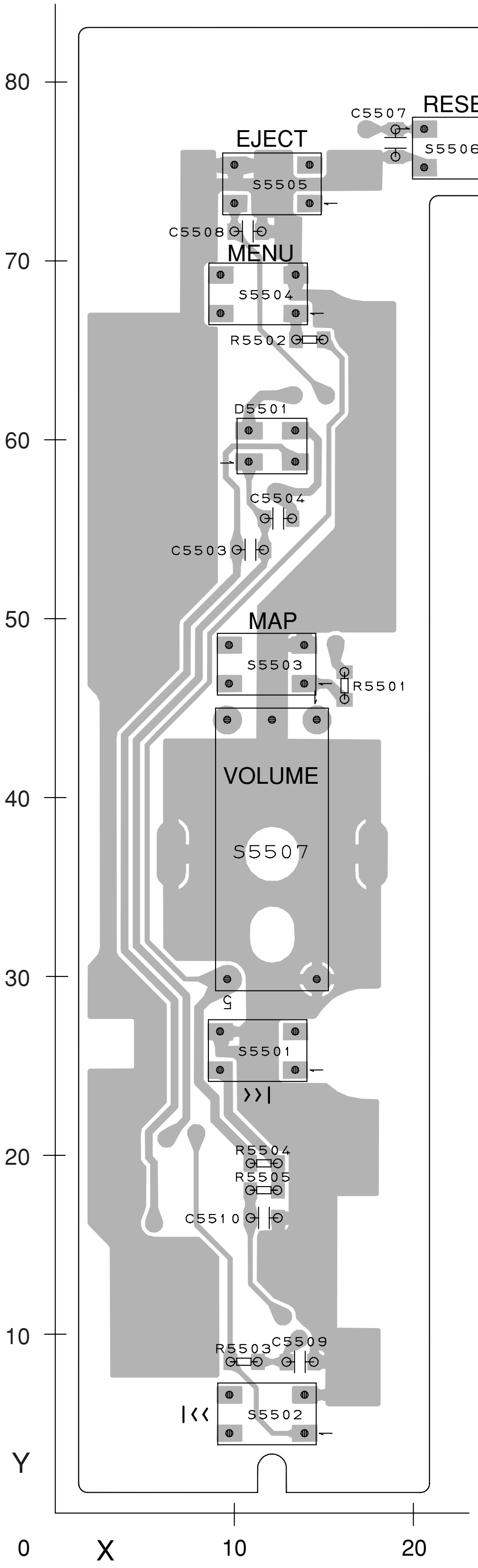


SIDE B

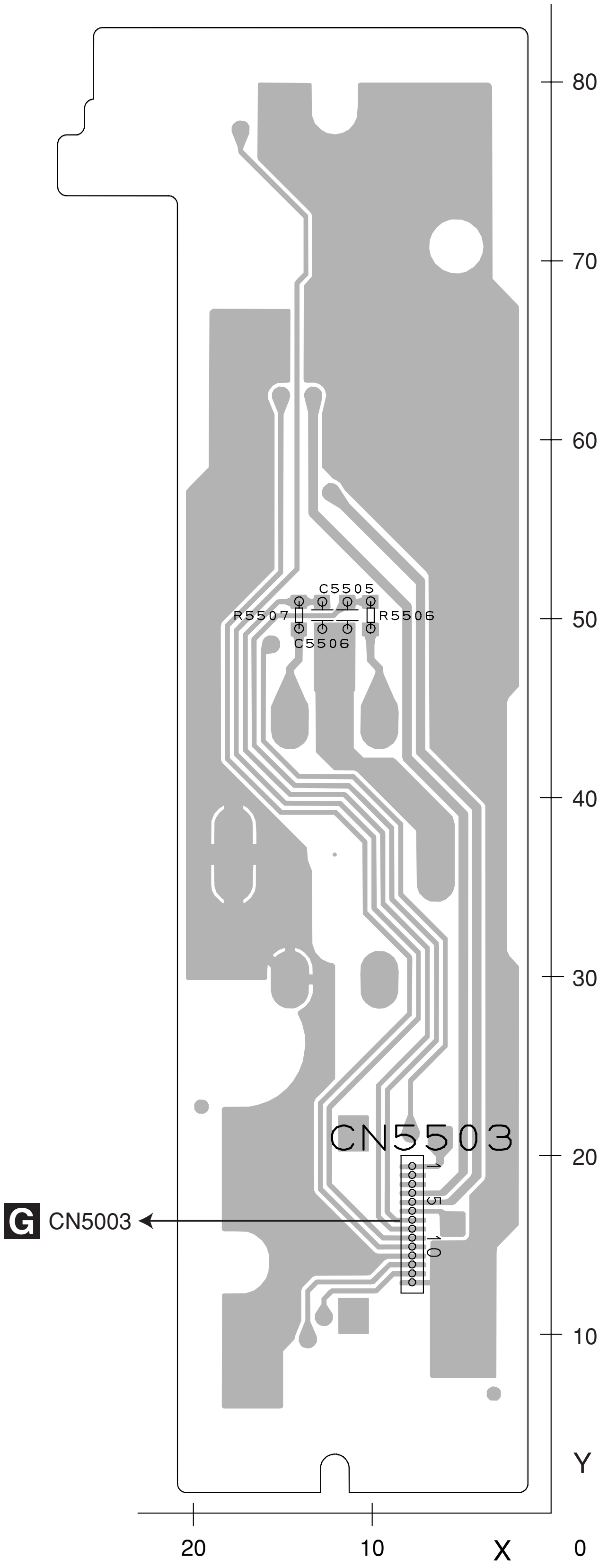

IC5307
COM
V5
V53
VM10
V15
V8
LCDB
LCDR
LCDG
HSY
IC5901
5909
02
C5666
R5661
C5651
R5657
R5654
C5652
R5653
Q5650
R5659
R5656
R5662
R5660
R5658
R5655
R5651
R5652
R5650
C5653
R5674
C5660
R5672
R5675
C5671
R5203
R5039
C5034
C5033
C5035
R5024
R5038
R5026
C5021
R5022
R5028
R5029
R5023
C5018
R5015
R5013
R5720
R5721
C5027
C5025
C5023
R5021
R5044
R5043
R5042
R5019
R5020
R5045
C5017
R5012
C5016
R5027
C5014
R5014
C5663
C5038
C5013
C5116
C5115
R5126
R5123
R5120
C5107
C5100
C5117
C5118
C5112
R5121
R5119
R5122
C5101
R5158
R5157
R5115
C5119
R5129
R5125
R5118
R5108
R5101
R5110
R5103
R5105
R5112
R5151
R5152
R5149
C5135
C5130
C5120
R5135
C5128
C5111
R5150
C5126
R5133
C5114
R5145
R5138
R5130
C5109
IC5101
D5104
C5129
R5127
C5113
C5108
R5331
C5133
R5148
R5128
R5131
R5202
R5136
R5156
L5104
C5143
L5103
C5142
R5155
C5144
C5136
L5105
L5106
D5105
C5145
Q5180
C5181
R5181
R5182
R5183
R5189
R5180
C5182
R5197
C5192
R5184
C5190
C5188
C5200
E
R5219
C5203
C5218
R5191
C5211
C5205
C5206
C5209
R5188
R5193
C5213
R5221
C5208
C5219
C5235
C5223
C5228
R5201
R5220
C5226
C5195
C5233
R5222
C5224
R5218
C5230
C5242
C5247
C5249
90
80
70
60
50
40
30
20
10
0
Y
70
60
50
40
30
20
10
X
A
B
C
D
E
F

4.7 KEY PCB

H KEY PCB **SIDE A**

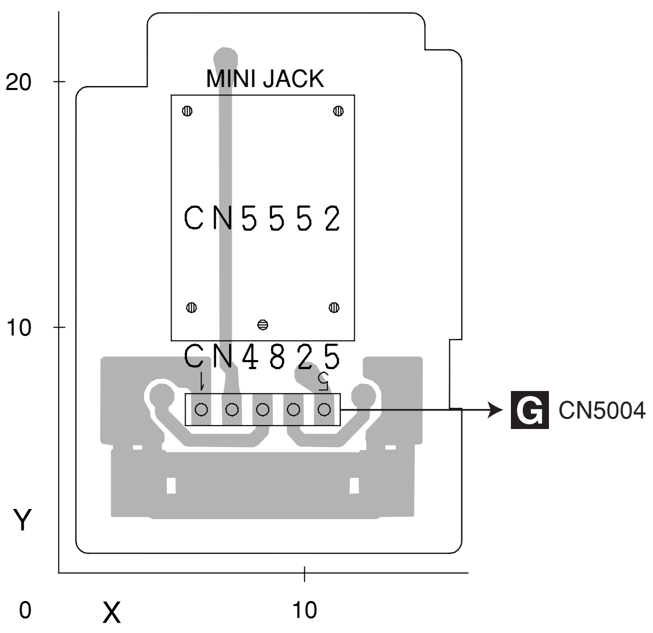


H KEY PCB **SIDE B**

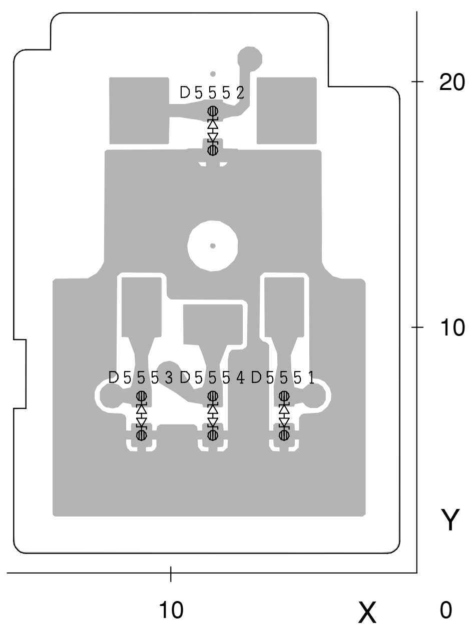


4.8 AV MINI JACK PCB

I AV MINI JACK PCB **SIDE A**



I AV MINI JACK PCB **SIDE B**



5. ELECTRICAL PARTS LIST

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*
  Chip Resistor
  RS1/○S○○○J,RS1/○○S○○○J
  Chip Capacitor (except for CQS.....)
  CKS....., CCS....., CSZS.....
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Meaning of the figures and others in the parentheses in the parts list.*
  Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.
  IC 301 (A, 91, 111) IC NJM2068V

Unit Number : CWN2189(UC)
Unit Number : CWN2089(EW5)
Unit Name : Navi Mother Unit
Unit Number : CWX3446(UC)
Unit Number : CWX3447(EW5)
Unit Name : GPS Unit
Unit Number : CWN2190(UC)
Unit Number : CWN2090(EW5)
Unit Name : AV Unit
Unit Number : CWN2188(UC)
Unit Number : CWN2091(EW5)
Unit Name : Monitor Unit
Unit Number :
Unit Name : Keyboard Unit
Unit Number : CWX3401
Unit Name : DVD Core Unit
Unit Number : CWX3154
Unit Name : Compound Unit(A)
Unit Number : CWX3394
Unit Name : Compound Unit(B)

A

Unit Number : CWN2189(UC)
Unit Number : CWN2089(EW5)
Unit Name : Navi Mother Unit

MISCELLANEOUS

Circuit Symbol and No.			Part No.
IC 1	(B,135,30)	IC	K4S561632H-UL75
IC 2	(A,138,50)	IC	UPD705103GM-180S1
IC 3	(B,151,30)	IC	HY57V561620FLTP-H
IC 4	(A,154,20)	IC	TC7SZ08FU
IC 5	(B,143,54)	IC	PD6336C
IC 101	(A,131,17)	IC	TC74LCX08FTS1
IC 102	(A,133,11)	IC	TC7SH04FUS1
IC 103	(A,131,27)	IC	TC74LCX245FTS1
IC 104	(A,139,27)	IC	TC74LCX245FTS1
IC 105	(A,148,27)	IC	TC74LCX245FTS1
IC 106	(A,156,27)	IC	TC74LCX245FTS1
IC 107	(A,159,37)	IC	TC74LCX541FTS1
IC 108	(A,159,45)	IC	TC74LCX541FTS1
IC 109	(A,159,54)	IC	TC74LCX541FTS1
IC 110	(B,114,39)	IC(UC)	PEH103B
	(B,114,39)	IC(EW5)	PEH077B
IC 111	(B,114,23)	IC(UC)	PEH104B
	(B,114,23)	IC(EW5)	PEH078B
IC 112	(B,103,61)	IC	TC7SH00FUS1
IC 113	(B,115,57)	IC	M5M5V216ATP-70HI
IC 114	(B,103,58)	IC	TC7SH08FUS1
IC 201	(A,101,24)	IC	MB86291APFVS-G-DL
IC 301	(A,141,18)	IC	M51957BFP
IC 302	(A,138,10)	IC	TC7SH08FUS1
IC 304	(A,105,52)	IC	AK4388VT
IC 309	(A,118,48)	IC	TC7SH08FUS1
IC 1901	(B,57,57)	IC	TPS5120DBT
IC 1903	(B,73,83)	IC	TPS5103IDB
IC 1931	(B,56,96)	IC	TPS5103IDB
IC 2050	(A,20,38)	IC	TC74VHCT08AFTS1
IC 2051	(A,38,37)	IC	TC7WH32FU
IC 2052	(A,10,40)	IC	TC7S32FU
IC 2053	(A,39,46)	IC	TC7WH08FU
IC 2055	(A,13,34)	IC	BD5335FVE
IC 2056	(B,23,46)	IC(UC)	PE5580A
	(B,23,46)	IC(EW5)	PE5581A
IC 2058	(B,9,126)	IC	NJM2904M
IC 2061	(B,9,22)	IC	TC7SH08FUS1
IC 2062	(B,6,22)	L-MOS AND Gate	TC7SET08FUS1
IC 2065	(B,63,29)	IC	TC7SH04FUS1
IC 2067	(A,86,114)	L-MOS AND Gate	TC7SET08FUS1
IC 2068	(A,13,24)	IC	HA12241FP
IC 2070	(A,29,77)	IC	S-814A50AUC-BDO

Circuit Symbol and No.		Part No.
IC 2075	(A,147,103) IC	S-L2980A33MC-C6S
IC 2076	(B,28,93) IC	BD3931HFP
IC 2078	(B,115,109) IC	UPD4723GSS1
IC 2083	(A,33,38) IC	TC7SH14FUS1
IC 2084	(A,41,36) IC	TC7SH04FUS1
Q 201	(A,122,10) Transistor	UMD2N
Q 301	(A,147,21) Transistor	DTC114EUA
Q 1902	(B,66,48) FET	SP8K10S
Q 1903	(B,66,65) FET	SP8K10S
Q 1931	(B,55,83) FET	SP8K10S
Q 1934	(B,74,97) FET	SP8K2
Q 1935	(B,49,56) FET	2SK1827
Q 2050	(A,126,87) Transistor	2SA1576A
Q 2051	(B,19,28) Transistor	2SA1576A
Q 2052	(B,7,135) Transistor	DTC114WK
Q 2053	(A,47,26) Transistor	DTC124EUA
Q 2054	(B,13,128) Transistor	DTC114EUA
Q 2055	(A,28,24) Transistor	2SA1576A
Q 2056	(B,48,120) Transistor	DTA114EUA
Q 2057	(B,38,117) Transistor	DTC114EUA
Q 2058	(B,35,120) Transistor	2SA1587
Q 2059	(A,45,26) Transistor	DTC124EUA
Q 2060	(B,40,123) Transistor	IMX1
Q 2061	(B,31,117) Transistor	DTC114EUA
Q 2062	(B,36,129) Transistor	2SD1760F5
Q 2068	(B,58,17) Transistor	2SA1576A
Q 2069	(B,58,21) Transistor	2SA1576A
Q 2070	(B,58,24) Transistor	2SA1576A
Q 2071	(B,94,86) Transistor	2SA1834F5
Q 2072	(B,105,82) Transistor	2SC4081
Q 2088	(A,33,94) Transistor	2SC4081
Q 2089	(B,37,108) Transistor	DTC114EUA
Q 2090	(A,37,95) Transistor	2SC4081
Q 2091	(B,35,113) Transistor	2SA1576A
Q 2092	(B,67,74) Transistor	DTC114EUA
Q 2093	(B,54,105) Transistor	DTC114EUA
Q 2094	(B,77,75) Transistor	DTC114EUA
Q 2095	(B,49,117) Transistor	2SC4081
Q 2096	(B,43,36) Transistor(EW5)	DTC124EUA
Q 2097	(B,43,33) Transistor(EW5)	DTC124EUA
Q 2098	(B,43,30) Transistor(EW5)	DTC124EUA
Q 2099	(B,43,27) Transistor(EW5)	DTC124EUA
Q 2100	(A,50,128) Transistor	2SA1576A
Q 2101	(B,49,59) Transistor	DTC114EUA
Q 2102	(B,12,25) Transistor	2SA1576A
Q 2103	(B,5,28) Transistor	2SA1576A
Q 2104	(B,18,22) Transistor	DTC114EUA
Q 2105	(B,6,32) Transistor	DTC114EUA
D 1901	(B,65,59) Diode	RB160M-40
D 1902	(B,65,54) Diode	RB160M-40
D 1916	(B,78,89) Diode	RB400D
D 1918	(A,68,96) Diode	RB060L-40
D 1931	(B,51,90) Diode	RB160M-40
D 1933	(A,50,95) Diode	RB083L-20
D 2050	(A,28,53) Diode	DAN202U
D 2051	(B,14,118) Diode	1SS355
D 2052	(A,31,25) Diode	1SS355
D 2054	(B,39,120) Diode	RB500V-40
D 2055	(B,28,123) Diode	RB500V-40
D 2056	(B,28,119) Diode	HZU8R2(B1)

Circuit Symbol and No.		Part No.
D 2057	(B,27,128) Diode	HZU11(B2)
D 2059	(B,12,90) Diode	EDZ5R6(B)
D 2060	(B,110,120) Diode	EDZ13(B)
D 2061	(B,108,121) Diode	EDZ13(B)
D 2062	(B,109,123) Diode	EDZ13(B)
D 2063	(B,108,125) Diode	EDZ13(B)
D 2064	(B,112,123) Diode	EDZ13(B)
D 2065	(B,111,125) Diode	EDZ13(B)
D 2066	(B,115,123) Diode	EDZ13(B)
D 2067	(B,114,125) Diode	EDZ13(B)
D 2069	(B,118,123) Diode	EDZ13(B)
D 2070	(B,117,125) Diode	EDZ13(B)
D 2072	(B,121,125) Diode	EDZ13(B)
D 2073	(B,120,127) Diode	EDZ13(B)
D 2078	(A,94,122) Diode	EDZ5R6(B)
D 2079	(B,148,122) Diode	UDZS18(B)
D 2081	(B,89,131) Diode	EDZ5R6(B)
D 2082	(B,148,125) Diode	UDZS18(B)
D 2084	(A,108,120) Diode	EDZ6R8(B)
D 2085	(B,148,124) Diode	UDZS18(B)
D 2096	(A,40,83) Diode	HZU7R5(B3)
D 2097	(A,40,81) Diode	RB500V-40
D 2098	(A,38,79) Diode	RB500V-40
D 2099	(A,36,81) Diode	EDZ20(B)
D 2100	(B,130,125) Diode	MALS068X
D 2101	(B,148,120) Diode	MALS068X
D 2102	(B,130,124) Diode	MALS068X
D 2103	(B,130,122) Diode	MALS068X
D 2104	(A,54,105) Diode	RB500V-40
L 1	(B,127,16) Inductor	CTF1558
L 2	(B,142,17) Inductor	CTF1558
L 3	(A,154,16) Inductor	CTF1410
L 5	(A,135,32) Inductor	CTF1556
L 6	(A,123,33) Inductor	CTF1295
L 7	(B,157,53) Inductor	CTF1558
L 8	(A,144,67) Inductor	CTF1556
L 101	(A,128,15) Chip Ferrite Bead	CTF1557
L 102	(A,129,11) Chip Ferrite Bead	CTF1557
L 103	(A,135,27) Chip Ferrite Bead	CTF1557
L 104	(A,144,26) Chip Ferrite Bead	CTF1557
L 105	(A,152,26) Chip Ferrite Bead	CTF1557
L 106	(A,160,26) Chip Ferrite Bead	CTF1557
L 107	(A,159,33) Chip Ferrite Bead	CTF1557
L 108	(A,159,41) Chip Ferrite Bead	CTF1557
L 109	(A,159,49) Chip Ferrite Bead	CTF1557
L 110	(B,102,37) Inductor	CTF1556
L 111	(B,102,21) Inductor	CTF1556
L 112	(B,103,54) Inductor	CTF1556
L 113	(B,105,59) Chip Ferrite Bead	CTF1557
L 114	(B,105,54) Chip Ferrite Bead	CTF1557
L 201	(A,122,28) Inductor	CTF1556
L 203	(A,82,9) Inductor	CTF1556
L 204	(A,101,44) Inductor	CTF1488
L 205	(A,120,20) Inductor	CTF1556
L 206	(A,85,44) Inductor	CTF1556
L 207	(A,91,42) Inductor	CTF1379
L 301	(A,137,18) Chip Ferrite Bead	CTF1557
L 302	(A,141,12) Chip Ferrite Bead	CTF1557
L 305	(A,99,53) Inductor	CTF1556
L 308	(A,106,58) Inductor	CTF1334

Circuit Symbol and No.	Part No.
L 312 (A,117,51) Inductor	CTF1410
L 619 (A,125,79) Inductor	CTF1306
L 620 (A,123,83) Inductor	CTF1306
L 621 (A,124,83) Inductor	CTF1306
L 622 (A,122,79) Inductor	CTF1334
L 623 (A,122,83) Inductor	CTF1387
L 624 (A,121,79) Inductor	CTF1334
L 625 (A,103,79) Inductor	CTF1306
L 626 (A,101,79) Inductor	CTF1306
L 627 (A,124,79) Inductor	CTF1306
L 628 (A,119,79) Inductor	CTF1306
L 630 (A,114,83) Inductor	CTF1306
L 631 (A,117,83) Inductor	CTF1334
L 632 (A,117,79) Inductor	CTF1334
L 633 (A,116,83) Inductor	CTF1334
L 634 (A,115,79) Inductor	CTF1334
L 635 (A,118,79) Inductor	CTF1306
L 636 (A,119,83) Inductor	CTF1334
L 637 (A,114,79) Inductor	CTF1306
L 638 (A,113,83) Inductor	CTF1306
L 639 (A,112,83) Inductor	CTF1306
L 640 (A,111,79) Inductor	CTF1306
L 644 (A,109,83) Inductor	CTF1306
L 645 (A,108,79) Inductor	CTF1306
L 646 (A,107,83) Inductor	CTF1334
L 647 (A,107,79) Inductor	CTF1334
L 648 (B,69,18) Inductor	CTF1378
L 649 (B,69,22) Inductor	CTF1378
L 650 (B,69,26) Inductor	CTF1378
L 651 (B,66,29) Inductor	CTF1378
L 652 (A,106,83) Inductor	CTF1334
L 653 (A,105,79) Inductor	CTF1467
L 744 (A,110,79) Inductor	CTF1334
L 793 (A,126,83) Inductor	CTF1334
L 1901 (A,67,47) Inductor	CTH1257
L 1902 (A,67,66) Inductor	CTH1257
L 1903 (A,55,64) Inductor	CTH1253
L 1904 (A,75,94) Inductor	CTH1255
L 1907 (A,71,82) Inductor	CTH1257
L 1931 (A,54,86) Inductor	CTH1255
L 1932 (A,58,97) Inductor	CTH1257
L 2000 (B,42,72) Inductor	CTF1357
L 2001 (A,13,42) Inductor	CTF1410
L 2002 (A,16,34) Inductor	CTF1410
L 2003 (A,36,42) Inductor	CTF1410
L 2004 (B,36,34) Inductor	CTF1410
L 2005 (B,19,33) Inductor	CTF1410
L 2006 (A,35,66) Inductor	CTF1463
L 2007 (A,31,41) Inductor	CTF1410
L 2009 (A,32,64) Inductor	CTF1306
L 2010 (A,35,63) Inductor	CTF1306
L 2011 (A,32,62) Inductor	CTF1306
L 2012 (A,33,48) Inductor	CTF1410
L 2013 (A,35,62) Inductor	CTF1306
L 2014 (A,42,63) Inductor	CTF1306
L 2015 (A,32,61) Inductor	CTF1306
L 2016 (A,33,59) Inductor	CTF1306
L 2017 (A,33,57) Inductor	CTF1306
L 2018 (A,42,57) Inductor	CTF1306
L 2019 (A,35,45) Inductor	CTF1410

Circuit Symbol and No.	Part No.
L 2020 (B,37,46) Inductor	CTF1410
L 2021 (B,9,53) Inductor	CTF1410
L 2022 (B,23,61) Inductor	CTF1410
L 2023 (B,35,63) Inductor	CTF1410
L 2025 (B,5,119) Inductor	CTF1334
L 2027 (B,14,130) Inductor	CTF1334
L 2028 (B,17,123) Inductor	CTF1334
L 2030 (B,8,25) Inductor	CTF1410
L 2031 (B,6,25) Inductor	CTF1410
L 2050 (A,32,73) Inductor	CTF1453
L 2051 (A,93,82) Inductor	CTF1453
L 2151 (A,91,108) Inductor	CTF1453
L 2220 (A,110,83) Inductor	CTF1334
L 2221 (A,112,79) Inductor	CTF1334
L 2234 (B,7,95) Inductor	CTF1334
L 2235 (B,7,96) Inductor	CTF1334
L 2236 (B,7,98) Inductor	CTF1334
L 2237 (B,7,99) Inductor	CTF1334
L 2238 (B,7,86) Inductor(EW5)	CTF1334
L 2239 (B,7,88) Inductor(EW5)	CTF1334
L 2240 (B,7,89) Inductor(EW5)	CTF1334
L 2241 (B,7,91) Inductor(EW5)	CTF1334
L 2242 (B,7,93) Inductor(EW5)	CTF1334
L 2245 (A,14,63) Inductor	CTF1334
L 2246 (B,17,102) Inductor	CTF1334
L 2247 (B,18,99) Inductor	CTF1334
L 2248 (B,15,103) Inductor	CTF1463
L 2249 (B,16,89) Inductor(EW5)	CTF1334
L 2250 (B,13,89) Inductor(EW5)	CTF1334
L 2251 (B,14,94) Inductor	CTF1334
L 2252 (B,14,96) Inductor	CTF1334
L 2253 (B,14,97) Inductor	CTF1334
L 2254 (B,14,99) Inductor	CTF1334
L 2257 (A,40,107) Inductor	CTF1334
L 2262 (B,122,99) Inductor	CTF1410
L 2263 (B,59,31) Inductor	CTF1410
L 2264 (B,116,115) Inductor	CTF1334
L 2265 (B,115,115) Inductor	CTF1334
L 2266 (B,113,115) Inductor	CTF1334
L 2267 (B,112,115) Inductor	CTF1334
L 2268 (B,111,115) Inductor	CTF1334
L 2269 (B,109,115) Inductor	CTF1334
L 2270 (A,14,29) Inductor	LCYC2R2K1608
L 2271 (A,134,117) Inductor	CTF1334
L 2272 (A,137,117) Inductor	CTF1334
L 2273 (A,138,117) Inductor	CTF1334
L 2274 (A,133,117) Inductor	CTF1334
L 2276 (A,91,115) Inductor	CTF1379
L 2400 (A,105,91) Inductor	CTF1393
L 2401 (A,142,103) Chip Ferrite Bead	CTF1399
L 2402 (B,77,43) Inductor	CTF1393
L 2403 (B,102,78) Inductor	CTF1393
L 2404 (A,22,80) Inductor	CTF1393
L 2405 (A,35,78) Inductor	CTF1357
L 2406 (B,53,10) Inductor	CTF1410
L 2407 (A,41,41) Inductor	CTF1410
X 1 (A,139,71) Radiator 30.000 MHz	CSS1633
X 2 (B,131,60) Radiator 33.000 MHz	CSS1634
X 3 (B,157,48) Radiator 33.868 8 MHz	CSS1551
X 202 (A,122,20) Radiator 14.318 18 MHz	CSS1632

Circuit Symbol and No.		Part No.
X 2050	(B,6,38) Radiator 18.874 368 MHz	CSS1622
⚠FU1901	(A,76,68) Fuse 2 A	CEK1257
⚠FU1902	(A,76,46) Fuse 2 A	CEK1257
⚠FU1903	(A,53,73) Fuse 2.5 A	CEK1258
⚠FU1908	(A,77,101) Fuse 2.5 A	CEK1258
⚠FU1913	(A,79,79) Fuse 2.5 A	CEK1258
⚠FU1931	(A,50,101) Fuse 2.5 A	CEK1258
⚠FU2051	(A,31,126) Fuse 1 A	CEK1254
⚠FU2052	(B,114,130) Fuse 2 A	CEK1257
⚠FU2060	(A,50,79) Fuse 3.15 A	CEK1259
GY1	(A,10,69) Sensor	CSX1122
GY4	(A,35,111) Sensor	CSX1118
EF2052	(B,33,78) EMI Filter	CCG1172
EF2053	(B,32,74) EMI Filter	CCG1172

RESISTORS

Circuit Symbol and No.		Part No.
R 1	(B,127,33)	RS1/16S0R0J
R 3	(B,127,36)	RS1/16S0R0J
R 5	(A,110,58)	RS1/16S473J
R 6	(A,117,62)	RS1/16S473J
R 7	(A,152,47)	RS1/16S220J
R 8	(A,116,69)	RS1/16S473J
R 9	(A,119,66)	RS1/16S473J
R 10	(A,148,69)	RS1/16S104J
R 11	(A,151,69)	RAB4C473J
R 12	(A,141,66)	RS1/16S105J
R 13	(A,139,66)	RS1/16S151J
R 14	(B,143,33)	RS1/16S0R0J
R 16	(B,143,36)	RS1/16S0R0J
R 19	(A,117,67)	RS1/16S473J
R 20	(A,131,68)	RS1/16S101J
R 21	(A,134,65)	RS1/16S101J
R 22	(A,132,68)	RS1/16S101J
R 23	(B,133,58)	RS1/16S105J
R 24	(B,133,61)	RS1/16S151J
R 25	(A,130,68)	RS1/16S101J
R 26	(A,134,68)	RS1/16S101J
R 27	(A,130,65)	RS1/16S101J
R 28	(A,133,65)	RS1/16S101J
R 29	(A,129,65)	RS1/16S101J
R 30	(A,128,65)	RS1/16S101J
R 31	(A,128,68)	RS1/16S101J
R 32	(B,133,52)	RS1/16S473J
R 33	(A,127,68)	RS1/16S473J
R 34	(B,154,49)	RS1/16S105J
R 35	(A,123,47)	RS1/16S104J
R 36	(A,122,58)	RS1/16S101J
R 37	(A,122,59)	RS1/16S101J
R 38	(A,122,61)	RS1/16S101J
R 39	(A,122,62)	RS1/16S101J
R 40	(A,122,45)	RS1/16S470J
R 45	(B,126,54)	RS1/16S104J
R 46	(B,126,60)	RS1/16S104J
R 47	(B,156,46)	RS1/16S104J
R 48	(B,155,64)	RS1/16S104J
R 49	(B,156,64)	RS1/16S104J
R 50	(B,158,64)	RS1/16S104J
R 51	(B,80,24)	RS1/16SS101J
R 52	(B,80,25)	RS1/16SS101J
R 53	(B,80,26)	RS1/16SS101J
R 54	(B,80,27)	RS1/16SS101J
R 55	(B,80,29)	RS1/16SS101J
R 57	(B,80,28)	RS1/16SS101J
R 59	(B,80,30)	RS1/16SS101J
R 60	(B,80,31)	RS1/16SS101J
R 61	(A,57,17)	RS1/16SS0R0J
R 62	(B,80,33)	RS1/16SS101J
R 63	(B,80,32)	RS1/16SS101J
R 64	(B,82,37)	RS1/16SS101J
R 65	(B,80,35)	RS1/16SS101J
R 66	(A,72,33)	RS1/16SS101J
R 67	(A,71,32)	RS1/16SS101J
R 68	(A,71,33)	RS1/16SS101J
R 69	(A,70,32)	RS1/16SS101J
R 70	(A,69,33)	RS1/16SS101J
R 71	(A,69,32)	RS1/16SS101J
R 72	(A,68,33)	RS1/16SS101J
R 73	(A,68,32)	RS1/16SS101J
R 74	(A,67,33)	RS1/16SS101J
R 75	(A,67,32)	RS1/16SS101J
R 76	(A,66,33)	RS1/16SS101J
R 77	(A,66,32)	RS1/16SS101J
R 78	(A,65,33)	RS1/16SS101J
R 79	(A,64,32)	RS1/16SS101J
R 80	(A,64,33)	RS1/16SS101J
R 81	(A,63,32)	RS1/16SS101J
R 82	(A,63,33)	RS1/16SS101J
R 84	(B,80,36)	RS1/16SS562J
R 85	(B,82,30)	RS1/16SS103J
R 87	(B,156,62)	RS1/16S104J
R 88	(B,128,47)	RS1/16S104J
R 89	(B,132,45)	RS1/16S0R0J
R 90	(B,132,44)	RS1/16S0R0J
R 93	(B,130,43)	RS1/16S153J
R 94	(B,134,43)	RS1/16S153J
R 95	(B,130,48)	RS1/16S153J
R 96	(B,130,47)	RS1/16S153J
R 97	(A,118,55)	RS1/16S473J
R 98	(A,155,60)	RS1/16S473J
R 101	(B,102,35)	RS1/16S473J
R 102	(B,102,20)	RS1/16S473J
R 103	(B,101,58)	RS1/16S473J
R 104	(A,131,21)	RS1/16S220J
R 151	(B,127,31)	RS1/16S0R0J
R 152	(B,158,34)	RS1/16S0R0J
R 153	(B,142,43)	RS1/16S471J
R 154	(A,116,55)	RS1/16S473J
R 155	(A,113,55)	RS1/16S473J
R 156	(A,105,65)	RS1/16S473J
R 158	(A,118,51)	RS1/16S473J
R 159	(B,126,56)	RS1/16S473J
R 160	(A,119,60)	RS1/16S473J
R 161	(A,105,68)	RS1/16S103J
R 162	(B,131,56)	RS1/16S473J
R 163	(A,122,57)	RS1/16S560J
R 164	(A,112,65)	RS1/16S473J
R 165	(A,122,68)	RS1/16S473J
R 166	(A,104,68)	RS1/16S473J
R 167	(A,117,63)	RS1/16S473J
R 170	(A,107,65)	RS1/16S473J

Circuit Symbol and No.	Part No.	Circuit Symbol and No.	Part No.
R 171 (A,109,65)	RS1/16S473J	R 365 (B,97,50)	RS1/16SS473J
R 172 (A,108,65)	RS1/16S473J	R 366 (B,97,49)	RS1/16SS473J
R 174 (A,122,66)	RS1/16S473J	R 367 (B,99,48)	RS1/16SS473J
R 175 (A,122,67)	RS1/16S473J	R 368 (B,99,50)	RS1/16SS473J
R 176 (A,122,55)	RS1/16S0R0J	R 369 (B,97,57)	RS1/16SS473J
R 177 (A,117,64)	RS1/16S473J	R 370 (A,89,71)	RS1/8S0R0J
R 180 (A,145,65)	RS1/16S101J	R 629 (A,120,83)	RS1/16S681J
R 181 (A,114,55)	RS1/16S473J	R 781 (B,59,32)	RS1/16S0R0J
R 182 (A,117,55)	RS1/16S473J	R 2000 (B,15,28)	RS1/16S0R0J
R 183 (A,114,62)	RS1/16S473J	R 2001 (A,19,16)	RS1/16S0R0J
R 184 (A,114,58)	RS1/16S473J	R 2002 (B,20,24)	RS1/16S0R0J
R 185 (A,112,62)	RS1/16S473J	R 2003 (A,20,11)	RS1/16S0R0J
R 186 (A,113,58)	RS1/16S473J	R 2004 (B,21,21)	RS1/16S0R0J
R 187 (A,112,58)	RS1/16S473J	R 2005 (A,21,16)	RS1/16S0R0J
R 188 (A,107,68)	RS1/16S473J	R 2006 (B,21,24)	RS1/16S0R0J
R 189 (A,108,68)	RS1/16S473J	R 2007 (A,22,11)	RS1/16S0R0J
R 190 (A,109,68)	RS1/16S473J	R 2008 (B,22,21)	RS1/16S0R0J
R 191 (B,126,63)	RS1/16S473J	R 2009 (B,26,31)	RS1/16S0R0J
R 192 (A,113,62)	RS1/16S473J	R 2010 (B,23,24)	RS1/16S0R0J
R 193 (A,123,64)	RS1/16S473J	R 2011 (B,24,31)	RS1/16S0R0J
R 194 (A,146,67)	RS1/16S390J	R 2012 (B,24,21)	RS1/16S0R0J
R 196 (A,112,68)	RS1/16S473J	R 2014 (B,24,24)	RS1/16S0R0J
R 198 (A,124,63)	RS1/16S473J	R 2015 (A,25,11)	RS1/16S0R0J
R 201 (A,120,40)	RN1/16SE1502D	R 2016 (B,25,21)	RS1/16S0R0J
R 202 (A,120,39)	RN1/16SE1202D	R 2017 (A,25,16)	RS1/16S0R0J
R 210 (A,99,41)	RS1/16S104J	R 2018 (B,26,24)	RS1/16S0R0J
R 211 (A,97,41)	RS1/16S104J	R 2019 (A,26,11)	RS1/16S0R0J
R 212 (A,90,42)	RS1/16S104J	R 2020 (B,27,21)	RS1/16S0R0J
R 213 (A,88,42)	RS1/16S104J	R 2021 (A,27,16)	RS1/16S0R0J
R 217 (A,121,35)	RS1/16S272J	R 2022 (B,27,24)	RS1/16S0R0J
R 220 (A,122,7)	RS1/16S223J	R 2023 (A,28,11)	RS1/16S0R0J
R 221 (A,121,25)	RS1/16S105J	R 2024 (B,28,21)	RS1/16S0R0J
R 222 (A,122,16)	RS1/16S151J	R 2025 (A,28,16)	RS1/16S0R0J
R 224 (A,79,15)	RS1/16S0R0J	R 2026 (B,29,24)	RS1/16S0R0J
R 225 (A,117,8)	RS1/16S104J	R 2027 (A,29,11)	RS1/16S0R0J
R 226 (A,118,8)	RS1/16S104J	R 2028 (B,30,21)	RS1/16S0R0J
R 227 (A,79,18)	RS1/16S104J	R 2029 (A,30,16)	RS1/16S0R0J
R 228 (A,80,18)	RS1/16S104J	R 2030 (B,30,24)	RS1/16S0R0J
R 229 (B,115,15)	RS1/16S560J	R 2031 (A,31,11)	RS1/16S0R0J
R 230 (A,80,12)	RS1/16S104J	R 2032 (B,31,21)	RS1/16S0R0J
R 232 (A,82,12)	RS1/16S104J	R 2033 (A,18,16)	RS1/16S0R0J
R 237 (B,112,15)	RS1/16S104J	R 2034 (A,32,11)	RS1/16S0R0J
R 238 (B,114,15)	RS1/16S330J	R 2035 (B,33,21)	RS1/16S0R0J
R 240 (A,114,7)	RS1/16S104J	R 2036 (A,33,16)	RS1/16S0R0J
R 301 (A,136,18)	RS1/16S123J	R 2037 (B,33,24)	RS1/16S0R0J
R 302 (A,136,21)	RS1/16S103J	R 2038 (A,34,11)	RS1/16S0R0J
R 303 (A,137,15)	RS1/16S473J	R 2039 (B,34,21)	RS1/16S0R0J
R 320 (A,106,56)	RS1/16S103J	R 2040 (A,34,16)	RS1/16S0R0J
R 329 (A,110,49)	RS1/16SS821J	R 2041 (B,35,24)	RS1/16S0R0J
R 330 (A,110,52)	RS1/16SS221J	R 2042 (A,35,11)	RS1/16S0R0J
R 331 (A,110,51)	RS1/16SS221J	R 2043 (B,14,20) (EW5)	RS1/16S0R0J
R 332 (A,110,50)	RS1/16SS472J	R 2044 (A,36,16)	RS1/16S0R0J
R 349 (B,156,43)	RS1/16S473J	R 2045 (B,17,19) (EW5)	RS1/16S0R0J
R 350 (B,147,42)	RS1/16S473J	R 2046 (A,37,11)	RS1/16S0R0J
R 356 (A,109,55)	RS1/16S0R0J	R 2047 (B,36,21) (EW5)	RS1/16S0R0J
R 360 (B,97,59)	RS1/16SS473J	R 2048 (A,37,16)	RS1/16S0R0J
R 361 (B,97,46)	RS1/16SS473J	R 2049 (B,14,19) (EW5)	RS1/16S0R0J
R 362 (B,97,58)	RS1/16SS473J	R 2050 (A,38,11)	RS1/16S0R0J
R 363 (B,97,47)	RS1/16SS473J	R 2051 (B,17,18) (EW5)	RS1/16S0R0J
R 364 (B,97,51)	RS1/16SS473J	R 2052 (A,39,16)	RS1/16S0R0J

Circuit Symbol and No.				Part No.
R	2053	(B,14,17)	(EW5)	RS1/16S0R0J
R	2054	(A,40,11)		RS1/16S0R0J
R	2055	(B,17,16)	(EW5)	RS1/16S0R0J
R	2056	(A,40,16)		RS1/16S0R0J
R	2057	(B,36,24)		RS1/16S0R0J
R	2058	(A,41,11)		RS1/16S0R0J
R	2059	(B,37,21)		RS1/16S0R0J
R	2060	(A,42,16)		RS1/16S0R0J
R	2061	(B,38,24)		RS1/16S0R0J
R	2062	(A,43,11)		RS1/16S0R0J
R	2063	(B,39,21)		RS1/16S0R0J
R	2064	(A,43,16)		RS1/16S0R0J
R	2065	(B,40,25)		RS1/16S0R0J
R	2066	(B,59,28)		RS1/16S0R0J
R	2067	(B,41,21)		RS1/16S0R0J
R	2068	(B,65,16)		RS1/16S0R0J
R	2069	(B,42,21)		RS1/16S0R0J
R	2070	(B,64,20)		RS1/16S0R0J
R	2071	(B,44,21)	(EW5)	RS1/16S0R0J
R	2072	(B,65,24)		RS1/16S0R0J
R	2073	(B,44,24)	(EW5)	RS1/16S0R0J
R	2074	(A,47,11)		RS1/16S0R0J
R	2075	(B,45,22)	(EW5)	RS1/16S0R0J
R	2076	(A,48,16)		RS1/16S0R0J
R	2077	(B,46,24)	(EW5)	RS1/16S0R0J
R	2078	(A,29,65)		RS1/16S104J
R	2079	(B,15,34)		RS1/16S104J
R	2081	(B,43,25)		RS1/16S471J
R	2082	(B,41,25)		RS1/16S471J
R	2083	(B,36,30)		RS1/16S471J
R	2084	(B,22,31)	(EW5)	RS1/16S223J
R	2085	(B,23,33)	(EW5)	RS1/16S681J
R	2086	(B,27,31)	(EW5)	RS1/16S681J
R	2087	(B,31,30)		RAB4C104J
R	2088	(B,16,28)		RS1/16S472J
R	2089	(A,13,31)		RS1/16S102J
R	2090	(B,19,31)		RS1/16S472J
R	2091	(B,6,45)		RS1/16S104J
R	2093	(B,22,29)		RS1/16S102J
R	2094	(B,24,28)		RS1/16S473J
R	2095	(B,8,45)		RS1/16S104J
R	2096	(A,36,48)		RS1/16S104J
R	2097	(B,37,39)		RS1/16S102J
R	2098	(B,37,40)		RS1/16S103J
R	2099	(B,36,43)	(EW5)	RAB4C681J
R	2100	(B,8,47)		RS1/16S220J
R	2101	(B,8,48)		RS1/16S220J
R	2102	(B,40,43)	(EW5)	RAB4C223J
R	2103	(B,37,49)		RAB4C681J
R	2104	(A,45,16)		RS1/16S822J
R	2105	(A,46,11)		RS1/16S822J
R	2107	(B,37,59)		RS1/16S104J
R	2108	(B,10,56)		RS1/16S220J
R	2110	(B,38,59)		RS1/16S104J
R	2111	(B,11,59)		RS1/16S220J
R	2113	(B,40,59)		RS1/16S104J
R	2114	(B,8,50)		RS1/16S104J
R	2115	(B,10,53)		RS1/16S104J
R	2116	(B,26,60)		RS1/16S102J
R	2118	(B,41,59)		RS1/16S104J

Circuit Symbol and No.			Part No.
R	2119	(B,31,60)	RS1/16S104J
R	2120	(B,15,60)	RS1/16S681J
R	2121	(B,37,54)	RAB4C0R0J
R	2122	(A,26,54)	RS1/16S681J
R	2123	(B,20,61)	RS1/16S220J
R	2124	(B,18,60)	RS1/16S220J
R	2125	(B,17,61)	RS1/16S220J
R	2126	(A,28,56)	RS1/16S0R0J
R	2127	(B,43,58)	RS1/16S473J
R	2129	(B,34,63)	RS1/16S104J
R	2130	(B,26,64)	RAB4C104J
R	2132	(B,15,61)	RS1/16S103J
R	2135	(B,30,63)	RS1/16S103J
R	2137	(B,28,60)	RS1/16S102J
R	2138	(B,22,66)	RS1/16S104J
R	2139	(B,37,64)	RS1/16S104J
R	2141	(B,7,131)	RS1/16S104J
R	2142	(B,8,115)	RS1/16S473J
R	2143	(B,10,131)	RS1/16S563J
R	2144	(B,9,132)	RS1/16S513J
R	2145	(B,9,121)	RS1/16S104J
R	2146	(B,9,118)	RS1/16S513J
R	2147	(B,11,121)	RS1/16S513J
R	2148	(B,6,120)	RS1/16S102J
R	2149	(B,6,117)	RS1/16S102J
R	2150	(A,49,23)	RS1/16S102J
R	2151	(A,18,42)	RS1/16SS0R0J
R	2152	(A,20,44)	RS1/16SS0R0J
R	2157	(A,47,23)	RS1/16S104J
R	2160	(B,10,44)	RS1/16SS0R0J
R	2162	(B,12,119)	RS1/16S564J
R	2163	(B,14,115)	RS1/16S202J
R	2164	(B,11,115)	RS1/16S822J
R	2166	(B,15,123)	RS1/16S203J
R	2169	(B,15,120)	RS1/16S333J
R	2172	(A,25,24)	RS1/16S101J
R	2173	(A,28,21)	RS1/16S471J
R	2174	(A,30,23)	RS1/16S103J
R	2177	(A,31,21)	RS1/16S272J
R	2182	(B,42,119)	RS1/16S472J
R	2183	(B,46,124)	RS1/16S103J
R	2185	(B,32,120)	RS1/16S103J
R	2187	(B,7,20)	RS1/16S102J
R	2188	(B,35,117)	RS1/16S512J
R	2189	(B,43,122)	RS1/16S224J
R	2190	(B,37,123)	RS1/16S472J
R	2191	(A,45,23)	RS1/16S393J
R	2192	(A,45,20)	RS1/16S514J
R	2193	(B,45,120)	RS1/10S221J
R	2194	(B,32,123)	RS1/4S471J
R	2196	(A,43,21)	RS1/16S472J
R	2197	(A,41,21)	RS1/16S104J
R	2198	(A,40,20)	RS1/16S472J
R	2228	(A,9,63)	RS1/16S104J
R	2229	(A,9,61)	RS1/16S202J
R	2232	(B,18,94)	RS1/16S104J
R	2242	(B,12,92)	RS1/16S1001D
R	2244	(B,14,93)	RS1/16S1001D
R	2247	(B,17,92)	RS1/16S1101D
R	2266	(A,29,113)	RS1/16S0R0J

Circuit Symbol and No.		Part No.
R 2272	(A,29,111)	RS1/16S0R0J
R 2274	(A,128,90)	RS1/16S103J
R 2277	(B,114,102)	RS1/16S101J
R 2278	(B,113,99)	RS1/16S101J
R 2279	(B,113,102)	RS1/16S101J
R 2280	(B,112,99)	RS1/16S101J
R 2281	(B,111,102)	RS1/16S101J
R 2282	(B,110,99)	RS1/16S101J
R 2285	(A,7,29)	RS1/16S472J
R 2286	(B,65,18)	RS1/10S1000F
R 2287	(B,62,17)	RS1/16S100J
R 2288	(A,82,119)	RS1/16S221J
R 2289	(B,68,16)	RS1/16S102J
R 2290	(B,62,16)	RS1/16S0R0J
R 2291	(A,83,117)	RS1/16S621J
R 2292	(A,8,26)	RS1/16S101J
R 2293	(A,6,26)	RS1/16S101J
R 2295	(A,83,114)	RS1/16S473J
R 2296	(B,65,22)	RS1/10S1000F
R 2297	(B,61,21)	RS1/16S100J
R 2298	(B,67,20)	RS1/16S102J
R 2299	(B,61,20)	RS1/16S0R0J
R 2302	(B,65,26)	RS1/10S1000F
R 2303	(B,61,25)	RS1/16S100J
R 2304	(A,19,26)	RS1/16S102J
R 2305	(A,19,23)	RS1/16S101J
R 2306	(A,19,22)	RS1/16S101J
R 2307	(B,68,24)	RS1/16S102J
R 2308	(B,62,24)	RS1/16S0R0J
R 2309	(A,21,22)	RS1/16S620J
R 2310	(A,87,118)	RS1/16S121J
R 2313	(A,117,120)	RS1/16S681J
R 2314	(A,116,120)	RS1/16S681J
R 2315	(A,115,120)	RS1/16S681J
R 2316	(A,113,120)	RS1/16S681J
R 2317	(A,110,120)	RS1/16S101J
R 2318	(A,112,120)	RS1/16S681J
R 2319	(A,111,120)	RS1/16S681J
R 2400	(B,103,85)	RS1/10S330J
R 2401	(B,102,82)	RS1/16S330J
R 2402	(B,102,81)	RS1/16S330J
R 2405	(B,105,85)	RS1/16S102J
R 2406	(B,101,85)	RS1/16S103J
R 2410	(B,102,79)	RS1/16S392J
R 2413	(A,94,106)	RS1/16S0R0J
R 2414	(A,59,73)	RS1/4SA561J
R 2416	(B,38,114)	RS1/16S222J
R 2419	(B,54,119)	RS1/4S182J
R 2420	(A,42,91)	RS1/16S473J
R 2423	(B,38,110)	RS1/16S682J
R 2424	(A,39,95)	RS1/16S103J
R 2426	(A,40,84)	RS1/16S104J
R 2427	(B,36,111)	RS1/16S332J
R 2428	(A,42,96)	RS1/16S103J
R 2430	(A,108,85)	RS1/10S0R0J
R 2431	(A,72,119)	RS1/10S0R0J
R 2432	(A,29,67)	RS1/10S0R0J
R 2433	(A,29,71)	RS1/10S0R0J
R 2434	(A,27,71)	RS1/10S0R0J
R 2435	(A,22,66)	RS1/10S0R0J
R 2503	(B,58,47)	RS1/16S0R0J
R 2504	(B,56,46)	RS1/16S1800D
R 2505	(B,53,46)	RS1/16S1801D
R 2506	(B,51,47)	RS1/16S1001D
R 2507	(B,58,66)	RS1/16S0R0J
R 2508	(B,56,67)	RS1/16S3900D
R 2509	(B,53,67)	RS1/16S4701D
R 2510	(B,51,66)	RS1/16S1001D
R 2511	(B,53,47)	RS1/16S122J
R 2512	(B,53,66)	RS1/16S132J
R 2513	(B,51,82)	RS1/16S331J
R 2514	(B,80,100)	RS1/10S0R0J
R 2515	(B,79,97)	RS1/16S5600D
R 2516	(B,79,94)	RS1/16S2401D
R 2517	(B,79,92)	RS1/16S1601D
R 2518	(B,52,49)	RS1/16S332J
R 2519	(B,52,52)	RS1/16S104J
R 2520	(B,50,80)	RS1/16S0R0J
R 2521	(B,50,82)	RS1/16S5600D
R 2522	(B,50,85)	RS1/16S8201D
R 2523	(B,50,87)	RS1/16S1501D
R 2524	(B,52,64)	RS1/16S332J
R 2525	(B,78,97)	RS1/16S101J
R 2526	(B,78,77)	RS1/16S332J
R 2527	(B,78,82)	RS1/16S104J
R 2528	(B,50,102)	RS1/16S332J
R 2529	(B,50,98)	RS1/16S104J
R 2531	(B,80,85)	RS1/16S473J
R 2532	(B,73,77)	RS1/16S1503D
R 2533	(B,56,102)	RS1/16S1503D
R 2534	(B,56,44)	RS1/16S473J
R 2535	(B,52,62)	RS1/16S104J
R 2537	(B,78,100)	RS1/10S100J
R 2538	(B,66,82)	RS1/16S100J
R 2540	(B,51,79)	RS1/10S100J
R 2541	(B,57,90)	RS1/16S184J
R 2543	(B,68,55)	RS1/10S150J
R 2544	(B,68,59)	RS1/10S150J
R 2545	(B,72,89)	RS1/16S184J
R 2546	(B,56,49)	RS1/16S224J
R 2547	(B,56,64)	RS1/16S224J
R 2548	(B,63,98)	RS1/16S100J
R 2549	(A,79,87)	RS1/16S105J
R 2550	(A,57,105)	RS1/16S105J
R 2552	(A,26,62)	RS1/16S104J
R 2553	(B,58,42)	RS1/4S101J
R 2554	(A,81,66)	RS1/4S221J
R 2555	(B,70,74)	RS1/16S8203D
R 2556	(B,57,104)	RS1/16S8203D
R 2557	(B,125,23)	RS1/16SS0R0J
R 2558	(B,49,112)	RS1/16S104J
R 2559	(B,52,116)	RS1/16S104J
R 2560	(A,7,59)	RS1/16S0R0J
R 2561	(A,146,81) (EW5)	RS1/16S0R0J
R 2562	(A,146,79) (UC)	RS1/16S0R0J
R 2564	(B,4,45)	RS1/16S473J
R 2565	(B,32,24)	RS1/16S0R0J
R 2567	(A,107,89)	RS1/8S0R0J
R 2568	(B,28,65)	RS1/16S472J
R 2569	(A,27,46)	RS1/16S0R0J

Circuit Symbol and No.			Part No.
R 2571	(B,39,34)		RS1/16S104J
R 2574	(B,5,18)		RS1/16S104J
R 2575	(B,126,38)		RS1/16SS0R0J
R 2577	(A,50,130)		RS1/16S473J
R 2579	(B,49,63)		RS1/16S104J
R 2581	(A,35,54)		RS1/16S104J
R 2584	(B,20,64)		RS1/16S104J
R 2585	(B,41,67)		RS1/16S0R0J
R 2586	(B,37,95)		RS1/10S0R0J
R 2587	(B,15,25)		RS1/16S472J
R 2588	(B,17,26)		RS1/16S472J
R 2589	(B,6,30)		RS1/16S472J
R 2590	(B,8,28)		RS1/16S472J
R 2591	(B,139,86)	(EW5)	RS1/16S0R0J
R 2592	(B,139,88)	(UC)	RS1/16S0R0J
R 2594	(B,10,28)		RS1/16S104J
R 2595	(A,28,59)		RS1/16S104J
R 2596	(A,128,86)		RS1/16S471J
R 2597	(A,128,88)		RS1/16S101J
R 2766	(B,57,26)		RS1/16SS101J
R 2768	(B,42,129)		RS1/16S0R0J
R 2770	(B,55,7)		RS1/10S0R0J
R 2776	(B,57,27)		RS1/16SS473J

CAPACITORS

C 1	(B,128,18)		CKSRYB104K16
C 2	(B,127,21)		CKSRYB104K16
C 3	(B,127,24)		CKSRYB104K16
C 4	(B,127,29)		CKSRYB104K16
C 5	(B,127,41)		CKSRYB104K16
C 6	(A,148,36)		CKSRYB104K16
C 7	(A,152,44)		CKSRYB104K16
C 8	(A,152,49)		CKSRYB104K16
C 9	(A,152,52)		CKSRYB104K16
C 10	(A,152,55)		CKSRYB104K16
C 11	(A,152,60)		CKSRYB104K16
C 12	(B,132,17)		CKSQYB106K6R3
C 13	(B,142,25)		CKSRYB104K16
C 14	(B,142,28)		CKSRYB104K16
C 15	(A,143,35)		CKSRYB104K16
C 16	(A,141,35)		CKSRYB104K16
C 17	(A,143,66)		CKSRYB104K16
C 18	(A,141,68)		CCSRCH100D50
C 19	(A,138,68)		CCSRCH100D50
C 20	(B,145,17)		CKSRYB104K16
C 21	(B,144,21)		CKSRYB104K16
C 22	(B,144,24)		CKSRYB104K16
C 23	(B,144,29)		CKSRYB104K16
C 24	(B,143,40)		CKSRYB104K16
C 25	(A,137,36)		CKSRYB104K16
C 26	(A,137,65)		CKSRYB104K16
C 27	(B,148,17)		CKSQYB106K6R3
C 28	(B,153,15)		CKSRYB104K16
C 29	(B,158,27)		CKSRYB104K16
C 30	(A,154,18)		CKSRYF104Z25
C 31	(B,128,58)		CCSRCH9R0D50
C 32	(B,128,62)		CCSRCH9R0D50
C 33	(A,132,36)		CKSRYB104K16
C 35	(A,132,65)		CKSRYB104K16
C 36	(A,126,64)		CKSRYB104K16

Circuit Symbol and No.			Part No.
C 38	(A,131,32)		CKSQYB106K6R3
C 39	(A,123,40)		CKSRYB104K16
C 40	(A,122,42)		CKSRYB104K16
C 41	(A,123,50)		CKSRYB104K16
C 42	(B,137,44)		CKSRYB104K16
C 44	(B,133,56)		CKSRYB104K16
C 47	(B,141,65)		CKSRYB104K16
C 49	(B,139,44)		CKSRYB104K16
C 51	(A,144,35)		CKSRYB224K10
C 54	(B,80,37)		CCSRCH121J50
C 55	(B,144,44)		CKSRYB104K16
C 57	(B,147,44)		CKSRYB104K16
C 60	(B,149,65)		CKSRYB104K16
C 63	(B,154,46)		CKSRYB104K16
C 64	(B,154,51)		CKSRYB104K16
C 66	(B,154,54)		CKSRYB104K16
C 67	(B,156,54)		CKSQYB106K6R3
C 68	(A,127,35)	22 μF	CCG1178
C 69	(A,127,33)	22 μF	CCG1178
C 70	(A,126,29)	22 μF	CCG1178
C 71	(B,125,60)		CKSRYF103Z50
C 72	(B,159,51)		CKSRYF103Z50
C 73	(B,157,51)		CKSRYF104Z25
C 74	(B,154,61)		CKSRYF104Z25
C 75	(A,152,17)		CKSRYF104Z25
C 76	(B,127,27)		CKSRYB103K16
C 77	(B,135,17)		CKSRYB103K16
C 78	(B,142,20)		CKSRYB103K16
C 79	(B,158,29)		CKSRYB103K50
C 80	(B,151,16)		CKSRYB103K50
C 81	(B,143,39)		CKSRYB224K10
C 82	(B,158,22)		CKSRYB103K50
C 96	(B,160,22)		CKSRYB224K10
C 97	(B,160,27)		CKSRYB224K10
C 98	(B,160,29)		CKSRYB224K10
C 101	(A,127,17)		CKSRYB104K16
C 102	(A,131,11)		CKSRYB104K16
C 103	(A,135,25)		CKSRYB104K16
C 104	(A,144,29)		CKSRYB104K16
C 105	(A,152,29)		CKSRYB104K16
C 106	(A,160,29)		CKSRYB104K16
C 107	(A,156,33)		CKSRYB104K16
C 108	(A,156,41)		CKSRYB104K16
C 109	(A,156,49)		CKSRYB104K16
C 110	(B,102,42)		CKSQYB106K6R3
C 111	(B,102,39)		CKSRYB104K16
C 112	(B,102,34)		CKSRYF224Z16
C 113	(B,102,26)		CKSQYB106K6R3
C 114	(B,102,23)		CKSRYB104K16
C 115	(B,102,18)		CKSRYF224Z16
C 116	(B,115,64)		CKSRYF104Z25
C 117	(B,103,51)		CKSQYB106K6R3
C 118	(B,103,49)		CKSRYB104K16
C 119	(B,115,49)		CKSRYF104Z25
C 120	(B,105,61)		CKSRYF104Z25
C 121	(B,105,56)		CKSRYF104Z25
C 122	(B,100,38)		CKSRYF104Z25
C 123	(B,102,54)		CKSRYF103Z50
C 124	(B,126,41)		CCSRCH101J50
C 125	(A,162,33)		CKSRYF104Z25

Circuit Symbol and No.		Part No.
C 126	(A,162,49)	CKSRYF104Z25
C 201	(A,120,37)	CKSRYB104K16
C 202	(A,115,42)	CKSRYB104K16
C 203	(A,113,42)	CKSRYB104K16
C 204	(A,118,37)	CKSRYB104K16
C 205	(A,107,42)	CKSRYB104K16
C 206	(A,102,41)	CKSRYB104K16
C 207	(A,96,41)	CKSRYB104K16
C 208	(A,92,42)	CKSRYB104K16
C 209	(A,83,37)	CKSRYB104K16
C 211	(A,118,34)	CKSRYB104K16
C 213	(A,118,31)	CKSRYB104K16
C 214	(A,119,32)	CKSRYB104K16
C 215	(A,83,35)	CKSRYB104K16
C 216	(A,83,31)	CKSRYB104K16
C 217	(A,83,30)	CKSRYB104K16
C 220	(A,121,32)	CKSQYB106K6R3
C 221	(A,118,29)	CKSRYB104K16
C 222	(A,118,26)	CKSRYB104K16
C 223	(A,120,8)	CKSRYB224K10
C 224	(A,118,24)	CKSRYB104K16
C 225	(A,120,28)	CKSRYB104K16
C 227	(A,83,28)	CKSRYB104K16
C 228	(A,83,24)	CKSRYB104K16
C 230	(A,123,25)	CCSRCH150J50
C 231	(A,123,16)	CCSRCH120J50
C 232	(A,118,21)	CKSRYB104K16
C 233	(A,118,18)	CKSRYB104K16
C 234	(A,83,19)	CKSRYB104K16
C 235	(A,84,18)	CKSRYB104K16
C 237	(A,119,15)	CKSRYB104K16
C 238	(A,119,13)	CKSRYB104K16
C 239	(A,84,16)	CKSRYB104K16
C 240	(A,84,14)	CKSRYB104K16
C 241	(A,84,12)	CKSRYB104K16
C 242	(A,112,7)	CKSRYB104K16
C 243	(A,108,7)	CKSRYB104K16
C 244	(A,105,7)	CKSRYB104K16
C 245	(A,102,7)	CKSRYB104K16
C 246	(A,98,7)	CKSRYB104K16
C 247	(A,94,7)	CKSRYB104K16
C 248	(A,89,7)	CKSRYB104K16
C 249	(A,85,9)	CKSQYB106K6R3
C 250	(A,104,42)	CKSQYB106K6R3
C 251	(A,120,25)	CKSQYB106K6R3
C 252	(A,85,42)	CKSQYB106K6R3
C 253	(A,121,13)	CKSRYF104Z25
C 255	(A,83,33)	CKSRYB103K50
C 256	(A,83,27)	CKSRYB103K50
C 257	(A,83,25)	CKSRYB103K50
C 258	(A,83,22)	CKSRYB103K50
C 259	(A,83,21)	CKSRYB103K50
C 260	(A,84,15)	CKSRYB103K50
C 261	(B,81,8)	CKSRYB103K50
C 262	(B,79,8)	CKSRYB103K50
C 301	(A,137,21)	CKSRYF104Z25
C 302	(A,144,21)	CKSRYB334K10
C 303	(A,138,12)	CKSRYF104Z25
C 306	(A,116,48)	CKSRYF104Z25
C 323	(A,103,56)	CKSQYB106K6R3

Circuit Symbol and No.		Part No.
C 328	(A,100,50)	CKSRYB104K16
C 329	(A,99,50) 10 µF	CCG1203
C 341	(A,156,18)	CCSRCH101J50
C 342	(A,136,13)	CKSRYF104Z25
C 344	(B,142,11)	CKSRYF103Z50
C 345	(B,140,11)	CKSRYF104Z25
C 346	(B,126,11)	CKSRYF103Z50
C 347	(B,115,9)	CKSRYF103Z50
C 348	(B,114,8)	CKSRYF104Z25
C 349	(B,92,7)	CKSRYF103Z50
C 1917	(A,76,52) 330 µF/6.3 V	CCH1366
C 1918	(A,76,61) 330 µF/10 V	CCH1623
C 1925	(A,58,48) 27 µF/20 V	CCH1744
C 1941	(A,58,77) 220 µF/10 V	CCH1409
C 1998	(A,68,102) 330 µF/6.3 V	CCH1366
C 2000	(B,40,73)	CKSRYB104K25
C 2001	(A,36,72)	CKSRYB104K25
C 2002	(A,42,71)	CKSRYF104Z25
C 2003	(A,34,72)	CKSRYF104Z25
C 2004	(A,36,39)	CKSRYB104K16
C 2005	(A,12,40)	CKSRYB104K16
C 2006	(A,16,31)	CKSRYB153K50
C 2007	(A,20,34)	CKSRYB104K16
C 2008	(A,36,68)	CKSRYF104Z25
C 2010	(B,36,36)	CKSRYB104K16
C 2011	(B,18,33)	CKSRYB104K50
C 2012	(B,34,34)	CKSRYB105K10
C 2013	(A,31,46)	CKSRYB104K16
C 2014	(A,13,36)	CKSRYB104K16
C 2015	(B,10,38)	CCSRCH7R0D50
C 2016	(B,10,36)	CCSRCH6R0D50
C 2017	(A,31,38)	CKSRYB104K50
C 2018	(A,39,44)	CKSRYB104K16
C 2019	(B,40,46)	CKSRYB104K16
C 2020	(B,9,56)	CKSRYB104K16
C 2023	(B,24,61)	CKSRYB104K16
C 2024	(B,34,61)	CKSRYB104K16
C 2025	(B,31,63)	CKSRYB104K16
C 2028	(B,34,60)	CKSRYB104K16
C 2029	(B,5,122)	CKSRYB104K50
C 2030	(B,9,119)	CKSRYB102K50
C 2033	(B,13,123)	CKSRYB104K50
C 2034	(B,12,125)	CKSRYB103K50
C 2035	(B,14,125)	CKSRYB823K16
C 2037	(B,45,124)	CKSRYB104K50
C 2038	(B,7,23)	CKSRYB104K50
C 2040	(B,37,124)	CKSRYB472K50
C 2041	(B,4,25)	CKSRYB104K50
C 2043	(B,28,129)	CKSRYB103K50
C 2044	(B,28,131)	CKSRYB103K50
C 2091	(A,46,113)	CEVW470M16
C 2093	(A,46,121)	CEVW101M16
C 2130	(B,117,99)	CSZSR330M10
C 2151	(A,99,88)	CEVW101M16
C 2168	(A,77,42)	CSZSR101M6R3
C 2170	(A,23,76)	CEVW100M16
C 2205	(A,12,62)	CKSRYB104K50
C 2206	(B,12,102)	CKSRYB102K50
C 2207	(B,18,97)	CKSRYB102K50
C 2209	(B,19,102)	CKSRYB102K50

Circuit Symbol and No.		Part No.
C 2210	(A,11,60)	CKSRYB474K16
C 2225	(A,40,109)	CKSRYB104K50
C 2227	(A,149,113)	CEVW100M16
C 2235	(A,125,90)	CKSRYB104K50
C 2236	(A,29,83)	CEVW101M16
C 2237	(B,118,101)	CKSRYB105K6R3
C 2238	(B,121,107)	CKSQYB105K16
C 2239	(B,120,102)	CKSQYB105K16
C 2240	(B,116,102)	CKSQYB105K16
C 2241	(B,59,29)	CKSRYB104K16
C 2242	(B,119,115)	CKSQYB105K16
C 2243	(B,123,111)	CKSQYB105K16
C 2244	(A,83,116)	CCSRCH150J50
C 2245	(A,14,27)	CKSRYB472K50
C 2247	(A,89,114)	CKSRYB104K16
C 2248	(B,108,119)	CKSRYB102K50
C 2249	(B,110,125)	CKSRYB102K50
C 2250	(B,113,125)	CKSRYB102K50
C 2251	(B,116,125)	CKSRYB102K50
C 2252	(B,119,125)	CKSRYB102K50
C 2253	(B,122,127)	CKSRYB102K50
C 2256	(B,148,127)	CKSRYB104K50
C 2400	(A,104,93)	CKSRYB104K50
C 2401	(B,78,41)	CKSRYB104K50
C 2402	(A,142,102)	CKSRYB104K50
C 2404	(A,92,91)	CKSRYB104K16
C 2405	(A,100,106)	CKSRYF104Z25
C 2407	(A,101,106)	CKSRYF103Z50
C 2409	(A,101,104)	CKSRYF103Z50
C 2410	(A,98,106)	CKSRYF104Z25
C 2411	(A,97,106)	CKSRYF103Z50
C 2412	(A,95,106)	CKSRYF103Z50
C 2413	(A,95,109)	CKSRYB104K50
C 2414	(B,105,79)	CKSRYB104K50
C 2415	(A,28,88)	CKSRYB103K50
C 2416	(A,21,72)	CKSRYB104K16
C 2417	(B,63,42)	CCSRCH680J50
C 2418	(A,24,82)	CKSRYB104K16
C 2419	(A,35,81)	CKSRYB334K10
C 2422	(A,151,110)	CKSRYB104K16
C 2423	(A,150,103)	CKSRYB104K16
C 2424	(B,32,87)	CKSYB105K16
C 2425	(B,35,100)	CKSYB105K25
C 2427	(B,33,71)	CKSRYB104K50
C 2428	(B,34,81)	CKSRYB104K50
C 2500	(B,56,47)	CKSRYB103K50
C 2501	(B,56,66)	CKSRYB472K50
C 2502	(B,51,85)	CKSRYB103K25
C 2503	(B,54,49)	CCSRCH101J50
C 2504	(B,52,50)	CKSRYB224K16
C 2505	(B,54,64)	CCSRCH221J50
C 2506	(B,52,63)	CKSRYB104K50
C 2507	(B,78,94)	CKSRYB103K25
C 2508	(B,78,80)	CCSRCH102J50
C 2509	(B,51,100)	CCSRCH101J50
C 2510	(B,49,53) 15 pF	CCG1240
C 2511	(B,79,80)	CKSRYB104K16
C 2512	(B,50,100)	CKSRYB104K50
C 2513	(B,52,54) 27 pF	CCG1241
C 2514	(B,52,59)	CKSRYB104K50

Circuit Symbol and No.		Part No.
C 2515	(B,76,77)	CKSRYB473K50
C 2516	(B,74,77) 30 pF	CCG1252
C 2517	(B,71,77)	CKSRYB105K10
C 2518	(B,53,102)	CKSRYB473K50
C 2519	(B,54,102) 30 pF	CCG1252
C 2520	(B,57,102)	CKSRYB105K10
C 2521	(B,52,53)	CKSRYB473K50
C 2522	(B,52,56)	CKSRYB105K10
C 2523	(B,52,60)	CKSRYB473K50
C 2524	(B,67,78) 4.7 μF	CCG1111
C 2525	(B,78,85)	CKSQYB475K10
C 2526	(B,57,89)	CKSRYF104Z25
C 2527	(B,51,95) 4.7 μF	CCG1222
C 2528	(B,59,52)	CKSRYF474Z16
C 2529	(B,64,57) 4.7 μF	CCG1222
C 2530	(B,59,62)	CKSRYF474Z16
C 2531	(B,75,89)	CKSRYF474Z16
C 2532	(B,54,90)	CKSRYF474Z16
C 2533	(B,72,90)	CKSRYB104K16
C 2534	(B,56,50)	CKSRYF104Z25
C 2535	(B,56,63)	CKSRYF104Z25
C 2536	(B,61,101) 4.7 μF	CCG1222
C 2537	(B,69,99) 10 μF	CCG1223
C 2538	(B,69,96) 10 μF	CCG1223
C 2539	(B,60,81) 4.7 μF	CCG1111
C 2542	(B,69,93) 10 μF	CCG1223
C 2543	(B,60,84) 4.7 μF	CCG1111
C 2546	(B,60,87) 4.7 μF	CCG1111
C 2547	(A,61,89) 10 μF	CCG1223
C 2549	(B,59,77) 4.7 μF	CCG1111
C 2640	(B,62,48) 4.7 μF	CCG1111
C 2641	(B,62,64) 4.7 μF	CCG1111
C 2644	(B,71,47) 4.7 μF	CCG1111
C 2645	(B,71,66) 4.7 μF	CCG1111
C 2648	(A,59,54) 10 μF	CCG1223
C 2650	(A,59,57) 10 μF	CCG1223
C 2900	(B,122,98)	CKSRYB105K6R3
C 2903	(A,30,111)	CKSRYB334K10
C 2908	(B,49,114)	CKSQYB105K10
C 2909	(B,51,9)	CKSRYB104K50
C 2910	(B,56,10)	CKSRYB104K50
C 2913	(A,18,30)	CKSRYB104K25
C 2914	(A,41,39)	CKSRYB104K50
C 2915	(A,93,91)	CKSRYB104K50
C 2916	(B,55,13) 100 μF/6.3 V	DCH1164
C 2920	(A,9,59)	CKSRYB474K16
C 2921	(B,71,24)	CKSRYB104K16
C 2922	(B,71,20)	CKSRYB104K16
C 2923	(B,70,16)	CKSRYB104K16

B

Unit Number : CWX3446(UC)
Unit Number : CWX3447(EW5)
Unit Name : GPS Unit

MISCELLANEOUS

IC 401	(A,25,16) IC	UPC2749T
IC 402	(B,20,27) IC	UPB1027GS

Circuit Symbol and No.			Part No.
IC 441	(A,33,30)	IC	NJM2100V
IC 461	(B,29,10)	IC	ADC12H034CIMSAS1
IC 501	(B,50,25)	IC	PD3390A
IC 502	(B,48,9)	IC(UC)	PEH100A8
	(B,48,9)	IC(EW5)	PEH101A8
IC 503	(A,50,29)	IC	M5M5V216ATP-70HI
IC 504	(A,31,14)	IC	MAX6364PUT29
IC 532	(A,47,15)	IC(EW5)	LC72720YVSS1
Q 441	(A,32,22)	Transistor	2SB1132
D 401	(B,11,27)	Diode	1SV314
D 501	(B,35,30)	Diode	RB751V-40
L 401	(B,12,29)	Inductor	CTF1549
L 402	(B,26,22)	Inductor	LCYC1R2K1608
L 403	(B,27,26)	Inductor	LCYC1R2K1608
L 404	(A,21,22)	Inductor	LCSA3N3R1608
L 405	(B,13,24)	Inductor	LCYB22NJ1608
L 406	(B,15,20)	Inductor	LCYB22NJ1608
L 407	(A,19,32)	Inductor	CTF1410
L 408	(B,26,31)	Inductor(UC)	CTF1556
	(B,26,31)	Inductor(EW5)	CTF1410
L 409	(B,19,12)	Inductor	LCYC1R0K2125
L 410	(B,26,17)	Inductor	CTF1547
L 412	(A,25,27)	Inductor	CTF1547
L 413	(A,25,26)	Inductor	CTF1547
L 414	(A,25,32)	Inductor	CTF1547
L 415	(A,26,29)	Inductor	CTF1547
L 416	(A,27,28)	Inductor	CTF1547
L 417	(B,25,20)	Inductor	CTF1547
L 418	(A,14,33)	Inductor	CTF1410
L 441	(B,32,20)	Inductor	CTF1410
L 442	(A,29,25)	Inductor	CTF1410
L 461	(A,29,9)	Inductor	CTF1410
L 462	(A,31,8)	Inductor	CTF1410
L 467	(B,33,17)	Inductor	CTF1547
L 468	(B,32,17)	Inductor	CTF1547
L 469	(A,32,11)	Inductor	CTF1410
L 501	(B,38,17)	Inductor	CTF1410
L 502	(B,36,32)	Inductor	CTF1410
L 503	(B,59,6)	Inductor	CTF1410
L 504	(A,38,33)	Inductor	CTF1410
L 531	(A,53,17)	Inductor	CTF1410
X 401	(A,14,27)	TCXO 16.368 MHz	CWX2381
X 501	(A,38,26)	Radiator 32.768 kHz	CSS1319
X 502	(B,36,26)	Radiator 20.00 MHz	CSS1549
X 532	(A,58,15)	Radiator 4.332 MHz(EW5)	CSS1550
F 401	(A,23,23)	Filter	CTF1548

RESISTORS

R 401	(B,11,26)		RS1/16SS472J
R 402	(B,12,30)		RS1/16SS472J
R 403	(B,14,32)		RS1/16SS122J
R 404	(B,14,30)		RS1/16SS622J
R 405	(A,23,26)		RS1/16SS100J
R 406	(B,27,29)		RS1/16S271J
R 407	(B,25,18)		RS1/16S2R2J
R 441	(A,30,27)		RN1/16SC10R0D
R 442	(B,33,24)		RN1/16SE1501D
R 443	(B,31,24)		RN1/16SE2402D
R 444	(B,31,26)		RN1/16SE3302D

Circuit Symbol and No.			Part No.
R 445	(B,32,33)		RN1/16SE4702D
R 446	(B,30,32)		RN1/16SE4702D
R 447	(A,33,25)		RS1/16S432J
R 448	(B,32,30)		RN1/16SE1002D
R 449	(B,33,32)		RN1/16SE2202D
R 450	(B,32,32)		RN1/16SE3302D
R 451	(A,29,32)		RS1/16S103J
R 452	(B,34,27)		RS1/16SS102J
R 454	(B,34,26)		RS1/16SS102J
R 460	(B,22,13)		RS1/16S0R0J
R 461	(A,37,5)		RS1/16SS102J
R 462	(A,38,9)		RS1/16SS102J
R 463	(B,36,12)		RAB4CQ102J
R 464	(A,35,12)		RAB4CQ333J
R 465	(A,39,8)		RS1/16SS102J
R 468	(A,58,8)	(EW5)	RS1/16SS471J
R 469	(A,58,6)	(EW5)	RAB4CQ471J
R 470	(B,35,7)		RAB4CQ471J
R 471	(B,35,4)		RAB4CQ104J
R 477	(B,31,17)		RS1/16SS222J
R 478	(B,30,16)		RS1/16SS222J
R 479	(B,28,15)		RS1/16SS222J
R 480	(B,29,17)		RS1/16SS332J
R 481	(B,30,17)		RS1/16SS332J
R 482	(A,38,6)		RS1/16SS223J
R 483	(A,38,5)		RS1/16SS473J
R 501	(B,39,27)		RS1/16SS0R0J
R 502	(B,38,29)		RS1/16SS102J
R 503	(B,39,26)		RS1/16SS154J
R 508	(B,60,14)	(UC)	RS1/16SS103J
	(B,60,14)	(EW5)	RS1/16SS472J
R 509	(B,34,15)		RS1/16SS473J
R 510	(A,38,7)		RS1/16SS102J
R 511	(A,34,19)		RS1/16SS103J
R 512	(B,39,30)		RS1/16SS473J
R 513	(B,60,16)		RS1/16SS103J
R 514	(B,39,29)		RS1/16SS473J
R 515	(A,30,12)		RS1/16SS473J
R 517	(B,39,22)		RS1/16SS103J
R 519	(B,39,21)		RS1/16SS473J
R 521	(B,37,29)		RS1/16SS473J
R 532	(A,43,10)	(EW5)	RS1/16SS104J
R 533	(A,40,18)	(UC)	RS1/16SS103J
	(A,40,18)	(EW5)	RS1/16SS332J
R 534	(A,41,19)		RS1/16SS103J
R 535	(A,38,13)		RS1/16SS103J
R 536	(A,39,18)		RS1/16SS0R0J
R 537	(A,38,15)	(EW5)	RS1/16S0R0J
R 538	(A,38,17)	(EW5)	RS1/16SS0R0J

CAPACITORS

C 401	(A,25,13)		CCSRCH100D50
C 402	(A,24,20)		CCSSCH101J50
C 403	(A,27,16)		CKSSYB104K10
C 404	(A,20,24)		CCSSCH101J50
C 405	(B,14,27)		CCSRUJ220J50
C 406	(B,14,29)		CCSRUJ220J50
C 407	(B,13,32)		CKSSYB333K16
C 408	(B,12,32)		CKSSYB182K50
C 409	(A,21,29)		CSZS100M6R3

Circuit Symbol and No.		Part No.
C 410	(B,28,32)	CKSSYB103K16
C 411	(A,21,27)	CKSSYB102K50
C 412	(A,21,28)	CKSSYB102K50
C 413	(A,20,31)	CKSSYB104K10
C 414	(A,24,32)	CKSSYB104K10
C 415	(A,25,30)	CKSSYB104K10
C 416	(A,24,28)	CKSSYB104K10
C 417	(B,25,22)	CKSSYB104K10
C 418	(A,21,32)	CKSSYB102K50
C 419	(B,39,32)	CKSSYB104K10
C 420	(A,14,32)	CKSSYB104K10
C 421	(B,26,27)	CKSSYB102K50
C 422	(B,25,26)	CKSSYB103K16
C 423	(B,26,24)	CKSSYB104K10
C 424	(B,27,22)	CCSRCH102J50
C 425	(B,29,23)	CCSRCH271J50
C 426	(B,28,26)	CCSRCH102J50
C 427	(B,25,25)	CKSSYB104K10
C 428	(B,15,24)	CKSSYB103K16
C 429	(B,12,24)	CCSRCH301J50
C 430	(B,13,22)	CCSSCH120J50
C 431	(B,14,20)	CCSRCH301J50
C 432	(B,16,22)	CKSSYB103K16
C 433	(B,19,9)	CCSRCH101J50
C 434	(B,19,14)	CKSSYB102K50
C 435	(B,20,14)	CKSSYB103K16
C 436	(B,31,22)	CKSSYB104K10
C 441	(B,31,28)	CKSRYB104K16
C 442	(A,30,29)	CCSRCH101J50
C 443	(A,30,32)	CKSRYB104K16
C 444	(B,33,22)	CKSSYB103K16
C 445	(A,29,30)	CKSSYB104K10
C 461	(A,28,5) 22 µF/6.3 V	CCH1408
C 462	(A,31,9)	CKSRYB104K16
C 463	(A,27,9)	CKSRYB104K16
C 464	(B,31,5)	CKSSYB103K16
C 465	(B,31,4)	CKSSYB103K16
C 466	(B,32,4)	CKSSYB103K16
C 467	(B,33,4)	CKSSYB103K16
C 468	(A,30,11)	CKSSYB104K10
C 469	(B,27,4)	CSZS100M10
C 470	(B,26,15)	CKSSYB104K10
C 471	(B,37,6)	CCSSCH101J50
C 501	(B,39,19)	CKSSYB104K10
C 502	(B,37,22)	CCSRCH150J50
C 503	(B,38,22)	CCSRCH150J50
C 504	(B,40,17)	CKSSYB104K10
C 506	(B,60,19)	CKSSYB104K10
C 507	(B,60,21)	CKSSYB104K10
C 508	(B,60,26)	CKSSYB104K10
C 509	(B,60,30)	CKSSYB104K10
C 511	(B,41,34)	CKSSYB104K10
C 512	(B,38,31)	CKSSYB104K10
C 514	(A,31,17)	CSZS100M6R3
C 515	(B,39,24)	CKSSYB104K10
C 516	(B,59,11)	CKSSYB104K10
C 517	(A,51,21)	CKSSYB104K10
C 518	(A,39,32)	CKSSYB104K10
C 535	(A,55,15) (EW5)	CSZS100M6R3
C 539	(A,55,19) (EW5)	CCSRCH100D50

Circuit Symbol and No.		Part No.
C 540	(A,53,12) (EW5)	CCSRCH100D50
C 541	(A,47,10) (EW5)	CCSRCH561J50
C 542	(A,45,10) (EW5)	CKSSYB104K10
C 543	(A,40,12) (EW5)	CSZS100M6R3
C 544	(A,50,10) (EW5)	CCSRCH331J50
C 545	(A,53,15) (EW5)	CKSSYB104K10

C

Unit Number : CWN2190(UC)
Unit Number : CWN2090(EW5)
Unit Name : AV Unit

MISCELLANEOUS

IC 1001	(A,46,43)	IC	NJM4558V
IC 1021	(A,72,43)	IC	BA4558RFVM
IC 1031	(A,56,43)	IC	BA4558RFVM
IC 1041	(A,64,43)	IC	BA4558RFVM
IC 1051	(B,66,43)	IC	TC4052BFT
IC 1061	(B,81,65)	IC	PML009A
IC 1111	(B,41,43)	IC	BA4558RFVM
IC 1131	(B,81,79)	IC	NJM2060V
IC 1201	(A,84,139)	IC	PAL007C
IC 1301	(A,15,30)	IC	NJM2137V
IC 1316	(B,16,25)	IC	NJM2136V
IC 1331	(B,24,56)	IC	BA7649AF
IC 1341	(B,8,44)	IC	NJM2505F
IC 1351	(B,18,46)	IC	NJM2235M
IC 1361	(A,6,47)	IC	TK15405BMI
IC 1381	(A,32,43)	IC	NJM2505F
IC 1601	(B,36,102)	IC	TPD1018F
IC 1821	(A,9,99)	IC	BA00CC0WCP-V5
IC 1841	(A,9,88)	IC	BA00CC0WCP-V5
IC 1876	(A,38,56)	IC	NJM2125F
IC 1891	(B,97,67)	Regulator(EW5)	BA00CC0WFP
Q 1001	(A,37,50)	Transistor	IMD3A
Q 1002	(A,40,43)	Transistor	FMG12
Q 1051	(B,59,42)	Transistor	DTC114EUA
Q 1052	(B,57,42)	Transistor	DTC114EUA
Q 1091	(A,91,91)	Transistor	FMG12
Q 1092	(A,81,91)	Transistor	FMG12
Q 1093	(A,71,91)	Transistor	FMG12
Q 1112	(B,49,60)	Transistor	IMD3A
Q 1114	(B,45,60)	Transistor	DTC323TK
Q 1201	(A,84,112)	Transistor	UMD2N
Q 1202	(A,87,112)	Transistor	UMD2N
Q 1203	(A,78,103)	Transistor	2SC4081
Q 1204	(B,92,100)	Transistor	UMD2N
Q 1205	(A,81,106)	Transistor	DTC124EUA
Q 1206	(A,84,106)	Transistor	DTC114EUA
Q 1331	(B,24,62)	Transistor	DTC114EUA
Q 1401	(B,138,93)	Transistor(EW5)	2SC3357
Q 1402	(B,142,87)	Transistor(EW5)	2SC3127
Q 1403	(A,135,75)	Transistor(EW5)	2SC3130
Q 1451	(A,105,74)	Transistor(EW5)	DTC144EK
Q 1452	(A,105,77)	Transistor(EW5)	DTC144EK
Q 1601	(A,53,115)	Transistor	2SC4116
Q 1602	(B,57,111)	Transistor	2SC4116
Q 1603	(B,57,100)	Transistor	DTC114EUA

Circuit Symbol and No.	Part No.
Q 1711 (B,45,12) Transistor	IMD2A
Q 1801 (A,123,117) Transistor	2SA1797
Q 1802 (A,117,117) Transistor	2SA1162
Q 1803 (B,117,117) Transistor	2SC4081
Q 1804 (B,113,104) Transistor	2SA1797
Q 1805 (B,114,119) Transistor	DTC114EUA
Q 1831 (B,20,76) Transistor	2SD1760F5
Q 1832 (B,25,68) Transistor	DTA114EUA
Q 1833 (B,27,68) Transistor	DTC114EUA
Q 1851 (A,109,24) Transistor	2SA1797
Q 1852 (A,118,32) Transistor	2SC4081
Q 1861 (A,102,34) Transistor	2SA1385-ZS1
Q 1862 (A,102,49) Transistor	2SC4081
D 1001 (A,36,43) Diode	DAP202K
D 1111 (B,49,64) Diode	DAN202K
D 1161 (B,91,96) Diode	DAP202K
D 1201 (A,82,125) Diode	MA111
D 1202 (A,82,110) Diode	UDZS8R2(B)
D 1205 (A,83,103) Diode	DAN202U
D 1206 (A,81,103) Diode	DAN202U
D 1451 (A,96,57) Diode(EW5)	HZU3R3(B1)
D 1601 (A,56,118) Diode	UDZS5R1(B)
D 1602 (B,59,115) Diode	HZU8R2(B1)
D 1603 (A,59,105) Diode	UDZS18(B)
D 1604 (A,59,103) Diode	UDZS18(B)
D 1605 (B,58,104) Diode	1SR154-400
D 1606 (A,59,107) Diode	1SS355
D 1607 (B,36,109) Diode	1SR154-400
D 1609 (B,36,112) Diode	1SR154-400
D 1610 (A,60,109) Diode	PTZ18A
D 1621 (A,128,126) Diode	EDZ6R8(B)
D 1622 (A,128,129) Diode	EDZ6R8(B)
D 1623 (B,131,116) Diode	EDZ6R8(B)
D 1624 (B,135,116) Diode	EDZ6R8(B)
D 1625 (B,138,116) Diode	EDZ6R8(B)
D 1626 (B,140,116) Diode	MALS068X
D 1627 (B,145,116) Diode	MALS068X
D 1628 (A,147,126) Diode	MALS068X
D 1629 (B,143,116) Diode	MALS068X
D 1630 (B,148,116) Diode	MALS068X
D 1651 (B,44,83) Diode	KS926S2
D 1652 (A,38,119) Diode	5KP22A
D 1701 (A,9,129) Diode	MALS068X
D 1702 (B,13,143) Diode	EDZ6R8(B)
D 1703 (A,13,129) Diode	MALS068X
D 1704 (A,26,117) Diode	1SR154-400
D 1705 (B,18,143) Diode	MALS068X
D 1706 (B,20,143) Diode	MALS068X
D 1707 (A,18,129) Diode	MALS068X
D 1708 (A,22,129) Diode	MALS068X
D 1709 (A,21,115) Diode	1SS355
D 1710 (B,16,129) Diode	MALS068X
D 1711 (B,16,143) Diode	MALS068X
D 1712 (A,14,117) Diode	PTZ27(B)
D 1713 (A,19,115) Diode	1SS355
D 1714 (A,16,113) Diode	DAN202U
D 1715 (A,23,117) Diode	PTZ20(B)
D 1716 (B,13,144) Diode	EDZ20(B)
D 1721 (A,121,131) Diode	UDZS5R6(B)
D 1722 (A,121,128) Diode	UDZS5R6(B)

Circuit Symbol and No.	Part No.
D 1801 (A,123,111) Diode	RB060L-40
D 1802 (B,132,116) Diode	UDZS27(B)
D 1821 (B,28,77) Diode	DAN202U
D 1824 (A,30,95) Diode	RB060L-40
D 1831 (B,22,67) Diode	UDZS5R6(B)
D 1844 (A,30,82) Diode	RB060L-40
D 1876 (A,39,59) Diode	EDZ4R3(B)
D 1877 (A,42,56) Diode	1SS355
D 1878 (B,110,116) Diode	UDZS22(B)
ZNR1401 (B,163,116) Surge Protector	RCCA-201Q31UA-PI
L 1061 (A,85,59) Inductor	LCYA2R2J2520
L 1301 (A,12,28) Inductor	CTF1410
L 1316 (B,13,28) Inductor	CTF1410
L 1331 (B,25,49) Inductor	CTF1410
L 1351 (B,11,46) Inductor	CTF1410
L 1361 (A,10,59) Inductor	LCTAW100J3225
L 1401 (B,149,102) Inductor(EW5)	LCTAWR12J2520
L 1402 (B,147,97) Inductor(EW5)	LCYCR10K2125
L 1404 (A,145,78) Inductor(EW5)	LCTAW101J2520
L 1405 (B,144,89) Inductor(EW5)	LCTCR22K2125
L 1406 (B,149,92) Inductor(EW5)	LCTCR10K2125
L 1407 (A,139,74) Inductor(EW5)	LCTCR15K2125
L 1408 (B,145,78) Inductor(EW5)	LCTAW101J2520
L 1410 (A,145,72) Chip Coil(EW5)	LCTAW1R0J2520
L 1431 (B,160,95) Chip Coil	LCTAW4R7J2520
L 1432 (A,143,43) Inductor	LCTAW2R2J3225
L 1433 (A,146,36) Inductor	LCTAW2R2J2520
L 1434 (A,143,35) Chip Ferrite Bead	CTF1399
L 1435 (A,145,19) Inductor	LCTAW2R2J3225
L 1451 (A,106,64) Chip Coil(EW5)	LCTAW1R0J2520
L 1452 (A,106,58) Inductor(EW5)	LCTAW2R2J2520
L 1453 (A,91,57) Chip Ferrite Bead(EW5)	CTF1557
L 1454 (A,95,67) Chip Ferrite Bead(EW5)	CTF1557
L 1601 (A,56,125) Inductor	CTF1410
L 1602 (A,65,109) Inductor	CTF1410
L 1603 (A,63,107) Inductor	CTF1410
L 1651 (A,44,106) Choke Coil 600 μH	CTH1347
L 1661 (A,102,24) Inductor	CTH1256
L 1662 (A,94,14) Inductor	CTF1306
L 1701 (A,16,116) Inductor	LCTC2R2K1608
L 1702 (A,17,119) Inductor	CTF1556
L 1721 (A,27,25) Inductor	CTF1379
L 1722 (A,119,126) Inductor	CTF1334
L 1723 (A,119,133) Inductor	CTF1334
T 1401 (A,140,93) Coil(EW5)	CTC1194
T 1402 (A,142,84) Coil(EW5)	CTC1193
T 1403 (A,132,84) Coil(EW5)	CTC1192
⚠FU1701 (A,24,123) Fuse 4 A	CEK1260
⚠FU1702 (A,26,129) Fuse 4 A	CEK1260
⚠FU1855 (A,108,31) Fuse 400 mA	CEK1250
⚠FU1864 (A,95,48) Fuse 1 A	CEK1254
Y 1452 (A,115,67) Tuner Unit(EW5)	CWE2023
Y 1431 (A,157,80) FM/AM Tuner Unit(UC)	CWE1952
(A,157,80) FM/AM Tuner Unit(EW5)	CWE1951
EF1701 (A,11,130) EMI Filter	CCG1067
EF1702 (A,17,130) EMI Filter	CCG1067
EF1703 (A,20,130) EMI Filter	CCG1067
EF1704 (B,18,129) EMI Filter	CCG1067
EF1705 (B,22,129) EMI Filter	CCG1067
EF1706 (B,27,129) EMI Filter	CCG1067
EF1707 (A,8,130) EMI Filter	CCG1067

Circuit Symbol and No.			Part No.
EF1708	(B,20,129)	EMI Filter	CCG1067
EF1709	(B,24,129)	EMI Filter	CCG1067
EF1710	(B,29,129)	EMI Filter	CCG1067
EF1711	(A,14,130)	EMI Filter	CCG1067
⚠	Fuse 10 A		CEK1208

RESISTORS

Circuit Symbol and No.		Part No.
R 1001	(A,44,36)	RS1/16S473J
R 1002	(A,47,37)	RS1/16S473J
R 1003	(A,47,38)	RS1/16S473J
R 1004	(A,44,37)	RS1/16S473J
R 1005	(A,44,51)	RS1/16S473J
R 1006	(A,47,49)	RS1/16S473J
R 1007	(A,47,48)	RS1/16S473J
R 1008	(A,44,49)	RS1/16S473J
R 1009	(A,41,39)	RS1/16S182J
R 1010	(A,41,47)	RS1/16S182J
R 1011	(A,41,46)	RS1/16S473J
R 1012	(A,41,40)	RS1/16S473J
R 1023	(A,70,37)	RS1/16S103J
R 1024	(A,73,38)	RS1/16S103J
R 1025	(A,73,39)	RS1/16S103J
R 1026	(A,70,38)	RS1/16S103J
R 1027	(A,70,50)	RS1/16S103J
R 1028	(A,73,48)	RS1/16S103J
R 1029	(A,73,47)	RS1/16S103J
R 1030	(A,70,48)	RS1/16S103J
R 1033	(A,54,36)	RS1/16S103J
R 1034	(A,57,38)	RS1/16S103J
R 1035	(A,57,39)	RS1/16S103J
R 1036	(A,55,38)	RS1/16S103J
R 1037	(A,55,50)	RS1/16S103J
R 1038	(A,57,48)	RS1/16S103J
R 1039	(A,57,47)	RS1/16S103J
R 1040	(A,55,48)	RS1/16S103J
R 1043	(A,62,37)	RS1/16S103J
R 1044	(A,65,38)	RS1/16S103J
R 1045	(A,65,39)	RS1/16S103J
R 1046	(A,62,38)	RS1/16S103J
R 1047	(A,62,50)	RS1/16S103J
R 1048	(A,65,48)	RS1/16S103J
R 1049	(A,65,47)	RS1/16S103J
R 1050	(A,62,48)	RS1/16S103J
R 1051	(B,65,37)	RS1/16S104J
R 1052	(B,67,37)	RS1/16S104J
R 1053	(B,68,50)	RS1/16S104J
R 1054	(B,66,50)	RS1/16S104J
R 1055	(B,64,50)	RS1/16S473J
R 1056	(B,65,50)	RS1/16S473J
R 1061	(B,85,47)	RS1/16S181J
R 1062	(B,78,47)	RS1/16S181J
R 1063	(B,86,47)	RS1/16S223J
R 1064	(B,76,47)	RS1/16S223J
R 1065	(B,87,47)	RS1/16S102J
R 1066	(B,75,47)	RS1/16S102J
R 1067	(B,73,56)	RS1/16S0R0J
R 1068	(A,80,46)	RS1/16S331J
R 1069	(A,83,46)	RS1/16S331J
R 1091	(A,93,89)	RS1/16S821J
R 1092	(A,88,89)	RS1/16S821J
R 1093	(A,83,89)	RS1/16S821J
R 1094	(A,78,89)	RS1/16S821J
R 1095	(A,73,89)	RS1/16S821J
R 1096	(A,68,89)	RS1/16S821J
R 1097	(A,93,91)	RS1/16S223J
R 1098	(A,83,91)	RS1/16S223J
R 1099	(A,73,91)	RS1/16S223J
R 1100	(A,88,91)	RS1/16S223J
R 1101	(A,78,91)	RS1/16S223J
R 1102	(A,68,91)	RS1/16S223J
R 1103	(A,95,91)	RS1/16S471J
R 1104	(A,85,91)	RS1/16S471J
R 1105	(A,75,91)	RS1/16S471J
R 1106	(A,87,91)	RS1/16S471J
R 1107	(A,77,91)	RS1/16S471J
R 1108	(A,67,91)	RS1/16S471J
R 1111	(B,39,37)	RS1/16S103J
R 1112	(B,39,38)	RS1/16S103J
R 1113	(B,39,40)	RS1/16S103J
R 1114	(B,42,38)	RS1/16S103J
R 1115	(B,41,52)	RS1/16S102J
R 1116	(B,41,49)	RS1/16S104J
R 1117	(B,38,48)	RS1/16S104J
R 1118	(B,38,47)	RS1/16S683J
R 1119	(B,41,47)	RS1/16S473J
R 1121	(B,43,57)	RS1/16S821J
R 1123	(B,43,60)	RS1/16S104J
R 1124	(B,59,57)	RS1/16S0R0J
R 1131	(B,90,80)	RS1/16S472J
R 1132	(B,73,80)	RS1/16S562J
R 1133	(B,72,80)	RS1/16S472J
R 1134	(B,88,80)	RS1/16S562J
R 1135	(B,75,80)	RS1/16S472J
R 1136	(B,87,80)	RS1/16S472J
R 1137	(B,88,78)	RS1/16S472J
R 1138	(B,73,78)	RS1/16S472J
R 1139	(B,87,78)	RS1/16S472J
R 1140	(B,75,78)	RS1/16S472J
R 1201	(A,82,121)	RS1/16S391J
R 1202	(A,82,119)	RS1/16S391J
R 1203	(A,77,106)	RS1/16S473J
R 1204	(A,79,106)	RS1/16S223J
R 1205	(A,80,110)	RS1/16S103J
R 1206	(B,90,104)	RS1/10S102J
R 1207	(A,86,107)	RS1/16S103J
R 1208	(A,87,105)	RS1/16S221J
R 1209	(A,86,105)	RS1/16S103J
R 1210	(B,76,116)	RS1/16S101J
R 1211	(B,72,116)	RS1/16S101J
R 1212	(B,74,116)	RS1/16S101J
R 1213	(B,79,116)	RS1/16S101J
R 1214	(B,89,126)	RS1/16S103J
R 1215	(B,87,126)	RS1/16S103J
R 1216	(B,90,126)	RS1/16S103J
R 1217	(A,87,107)	RS1/16S101J
R 1302	(A,13,34)	RS1/16S750J
R 1303	(A,17,34)	RS1/16S103J
R 1304	(A,15,34)	RS1/16S103J
R 1305	(A,22,32)	RS1/16S4701D

Circuit Symbol and No.		Part No.
R 1306	(A,21,32)	RS1/16S4701D
R 1307	(A,20,32)	RS1/16S4701D
R 1308	(A,20,30)	RS1/16S4701D
R 1309	(A,20,27)	RS1/16S101J
R 1310	(A,9,30)	RS1/16S102J
R 1311	(A,10,30)	RS1/16S563J
R 1312	(A,10,33)	RS1/16S473J
R 1316	(B,14,22)	RS1/16S750J
R 1317	(B,18,22)	RS1/16S103J
R 1318	(B,16,22)	RS1/16S103J
R 1319	(B,21,26)	RS1/16S4701D
R 1320	(B,21,24)	RS1/16S4701D
R 1321	(B,21,23)	RS1/16S4701D
R 1322	(A,15,25)	RS1/16S4701D
R 1323	(A,10,25)	RS1/16S101J
R 1333	(B,27,63)	RS1/16S104J
R 1338	(B,22,50)	RS1/16S105J
R 1341	(B,7,57)	RS1/16S750J
R 1342	(B,7,55)	RS1/16S473J
R 1343	(B,7,53)	RS1/16S473J
R 1344	(B,7,51)	RS1/16S101J
R 1345	(B,9,51)	RS1/16S101J
R 1351	(B,20,42)	RS1/16S105J
R 1352	(B,20,41)	RS1/16S105J
R 1353	(B,20,40)	RS1/16S105J
R 1354	(B,16,41)	RS1/16S105J
R 1361	(A,8,50)	RS1/16S105J
R 1362	(A,17,50)	RS1/16S750J
R 1372	(A,21,38)	RS1/16S0R0J
R 1381	(A,30,33)	RS1/16S750J
R 1382	(A,30,34)	RS1/16S473J
R 1383	(A,30,37)	RS1/16S473J
R 1385	(A,32,36)	RS1/16S101J
R 1386	(A,34,36)	RS1/16S101J
R 1401	(B,151,103) (EW5)	RS1/16S105J
R 1402	(B,155,94) (UC)	RS1/4S0R0J
R 1403	(A,135,94) (EW5)	RS1/16S821J
R 1404	(A,135,97) (EW5)	RS1/16S330J
R 1405	(A,142,78) (EW5)	RS1/16S332J
R 1406	(A,132,80) (EW5)	RS1/16S101J
R 1407	(B,139,81) (EW5)	RS1/16S151J
R 1408	(B,139,84) (EW5)	RS1/16S680J
R 1409	(B,142,85) (EW5)	RS1/16S152J
R 1410	(B,144,83) (EW5)	RS1/16S681J
R 1411	(A,131,73) (EW5)	RS1/16S151J
R 1412	(A,133,76) (EW5)	RS1/16S680J
R 1413	(B,146,89) (EW5)	RS1/16S181J
R 1414	(A,139,76) (EW5)	RS1/16S152J
R 1415	(A,141,74) (EW5)	RS1/16S681J
R 1416	(A,140,71) (EW5)	RS1/16S151J
R 1431	(B,149,63)	RS1/16S681J
R 1432	(B,149,62)	RS1/16S681J
R 1433	(B,149,61)	RS1/16S681J
R 1434	(B,149,59)	RS1/16S681J
R 1435	(B,149,58)	RS1/16S681J
R 1436	(B,149,57) (EW5)	RS1/16S681J
R 1438	(B,146,37)	RS1/16S681J
R 1439	(B,147,20)	RS1/16S0R0J
R 1440	(B,147,17)	RS1/16S0R0J
R 1443	(B,80,41)	RS1/16S0R0J

Circuit Symbol and No.		Part No.
R 1444	(B,82,41)	RS1/16S0R0J
R 1445	(B,149,56)	RS1/16S223J
R 1451	(A,107,71) (EW5)	RS1/16S473J
R 1455	(B,136,54) (EW5)	RS1/16S221J
R 1456	(A,93,55) (EW5)	RS1/10S391J
R 1601	(A,56,116)	RS1/16S473J
R 1602	(A,53,118)	RS1/16S104J
R 1603	(B,57,113)	RS1/16S473J
R 1604	(B,57,114)	RS1/16S104J
R 1605	(B,60,102)	RS1/16S103J
R 1606	(A,56,121)	RS1/16S102J
R 1607	(A,53,121)	RS1/16S472J
R 1608	(A,55,123)	RS1/4S102J
R 1609	(B,65,117)	RS1/4S102J
R 1610	(B,65,123)	RS1/4S472J
R 1611	(B,65,113)	RS1/4S102J
R 1612	(B,65,120)	RS1/4S472J
R 1613	(A,62,116)	RS1/4S472J
R 1621	(A,139,119)	RS1/16S0R0J
R 1622	(A,138,116)	RS1/16S0R0J
R 1623	(A,140,116)	RS1/16S0R0J
R 1624	(A,142,119)	RS1/16S0R0J
R 1625	(A,144,115)	RS1/16S0R0J
R 1626	(A,148,115)	RS1/16S0R0J
R 1627	(A,140,119)	RS1/16S0R0J
R 1628	(A,141,116)	RS1/16S0R0J
R 1629	(A,144,121)	RS1/16S0R0J
R 1655	(A,107,8) (EW5)	RS1/10S0R0J
R 1656	(A,110,8) (UC)	RS1/10S0R0J
R 1660	(A,29,72)	RS1/16S473J
R 1661	(A,76,15)	RS1/16S0R0J
R 1662	(A,79,15)	RS1/16S0R0J
R 1663	(A,82,15)	RS1/16S0R0J
R 1664	(A,77,15)	RS1/16S0R0J
R 1665	(A,88,15)	RS1/16S0R0J
R 1666	(A,89,15)	RS1/16S101J
R 1667	(A,74,12)	RS1/16S0R0J
R 1668	(A,72,12)	RS1/16S0R0J
R 1669	(A,90,15)	RS1/16S0R0J
R 1670	(B,105,7)	RS1/16S0R0J
R 1671	(B,94,14)	RS1/16S0R0J
R 1672	(A,80,15)	RS1/16S0R0J
R 1673	(A,71,9)	RS1/8S0R0J
R 1674	(A,71,7)	RS1/8S0R0J
R 1675	(A,66,7)	RS1/8S0R0J
R 1703	(A,16,119)	RS1/16S153J
R 1704	(A,19,119)	RS1/10S103J
R 1721	(A,16,19)	RS1/16S0R0J
R 1722	(A,16,20)	RS1/16S0R0J
R 1723	(A,16,21)	RS1/16S0R0J
R 1724	(B,26,13)	RS1/16S0R0J
R 1725	(A,16,23)	RS1/16S0R0J
R 1726	(A,20,17)	RS1/16S0R0J
R 1727	(A,24,22)	RS1/16S0R0J
R 1729	(A,25,25)	RS1/16S0R0J
R 1731	(A,26,22)	RS1/16S0R0J
R 1734	(A,27,22)	RS1/16S0R0J
R 1735	(B,28,17)	RS1/16S0R0J
R 1736	(A,28,25)	RS1/16S0R0J
R 1737	(B,29,20)	RS1/16S0R0J

Circuit Symbol and No.			Part No.
R 1738	(A,29,22)		RS1/16S0R0J
R 1739	(B,30,17)		RS1/16S0R0J
R 1740	(A,30,25)		RS1/16S0R0J
R 1741	(B,30,20)		RS1/16S0R0J
R 1742	(A,30,22)		RS1/16S0R0J
R 1743	(B,31,17)		RS1/16S0R0J
R 1744	(A,31,25)		RS1/16S0R0J
R 1745	(B,32,20)		RS1/16S0R0J
R 1746	(A,32,22)		RS1/16S0R0J
R 1747	(B,32,17)		RS1/16S0R0J
R 1748	(A,33,25)		RS1/16S0R0J
R 1749	(B,33,20)		RS1/16S0R0J
R 1750	(A,33,22)		RS1/16S0R0J
R 1751	(B,34,17)		RS1/16S0R0J
R 1752	(A,34,25)		RS1/16S0R0J
R 1753	(B,34,20)		RS1/16S0R0J
R 1754	(A,35,22)		RS1/16S0R0J
R 1755	(B,35,17)		RS1/16S0R0J
R 1756	(A,36,25)		RS1/16S0R0J
R 1757	(B,36,20)		RS1/16S0R0J
R 1758	(A,36,22)		RS1/16S0R0J
R 1759	(B,37,17)		RS1/16S0R0J
R 1760	(A,37,25)		RS1/16S0R0J
R 1761	(B,37,20)		RS1/16S0R0J
R 1762	(A,38,22)	(EW5)	RS1/16S0R0J
R 1763	(B,38,17)		RS1/16S0R0J
R 1764	(A,38,25)	(EW5)	RS1/16S0R0J
R 1766	(A,39,22)	(EW5)	RS1/16S0R0J
R 1768	(A,40,25)	(EW5)	RS1/16S0R0J
R 1770	(A,40,22)	(EW5)	RS1/16S0R0J
R 1772	(A,41,25)	(EW5)	RS1/16S0R0J
R 1774	(A,42,22)	(EW5)	RS1/16S0R0J
R 1776	(A,43,25)		RS1/16S0R0J
R 1778	(A,43,22)		RS1/16S0R0J
R 1780	(A,44,25)		RS1/16S0R0J
R 1782	(A,45,22)		RS1/16S0R0J
R 1784	(A,45,25)		RS1/16S0R0J
R 1786	(A,46,22)	(EW5)	RS1/16S0R0J
R 1788	(A,47,25)		RS1/16S0R0J
R 1790	(A,47,22)	(EW5)	RS1/16S0R0J
R 1792	(A,48,25)	(EW5)	RS1/16S0R0J
R 1794	(A,49,22)	(EW5)	RS1/16S0R0J
R 1796	(A,50,25)	(EW5)	RS1/16S0R0J
R 1801	(A,120,118)		RS1/16S103J
R 1802	(A,114,117)		RS1/4SA271J
R 1803	(A,112,117)		RS1/4SA271J
R 1804	(A,120,116)		RS1/16S102J
R 1805	(A,111,111)		RS2PMFR47J
R 1806	(A,117,114)		RS1/16S103J
R 1807	(B,116,104)		RS1/16S103J
R 1808	(B,110,110)		RS1/4SA271J
R 1809	(B,115,116)		RS1/16S103J
R 1810	(B,112,110)		RS1/4SA271J
R 1811	(B,114,116)		RS1/16S103J
R 1812	(B,112,120)		RS1/16S222J
R 1813	(B,107,104)		RS1/8S0R0J
R 1814	(B,110,120)		RS1/16S124J
R 1817	(A,132,115)		RS1/8S0R0J
R 1821	(B,18,101)		RN1/16SE1002D
R 1822	(B,18,99)		RN1/16SE2701D

Circuit Symbol and No.			Part No.
R 1823	(B,18,96)		RN1/16SE2201D
R 1825	(B,18,94)		RS1/16S104J
R 1831	(B,21,84)		RS1/8S0R0J
R 1832	(B,25,71)		RS1/16S471J
R 1841	(B,18,90)		RS1/16S8200D
R 1842	(B,18,88)		RS1/16S1201D
R 1843	(B,18,85)		RS1/16S1201D
R 1851	(A,99,13)		RS1/16S153J
R 1852	(A,112,24)		RS1/4SA331J
R 1853	(A,112,29)		RS1/4SA331J
R 1854	(A,108,28)		RS1/16S153J
R 1855	(A,118,30)		RS1/16S103J
R 1856	(A,115,29)		RS1/16S153J
R 1861	(A,102,43)		RS1/4SA151J
R 1862	(A,102,45)		RS1/4SA151J
R 1863	(A,102,41)		RS1/16S153J
R 1864	(A,107,49)		RS1/16S123J
R 1865	(A,102,47)		RS1/4SA151J
R 1866	(A,104,49)		RS1/16S103J
R 1876	(A,44,56)		RS1/16S102J
R 1891	(B,96,57)	(EW5)	RS1/16S5601D
R 1892	(B,96,56)	(EW5)	RS1/16S1000D
R 1893	(B,96,54)	(EW5)	RS1/16S1001D
R 1894	(B,106,70)	(EW5)	RS1/8S0R0J
R 1895	(B,99,60)	(EW5)	RS1/16S103J

CAPACITORS

C 1001	(A,48,34)	10 µF	CCG1203
C 1002	(A,47,52)	10 µF	CCG1203
C 1003	(A,48,52)	10 µF	CCG1203
C 1004	(A,44,38)		CCSRCH330J50
C 1005	(A,43,43)		CKSRYB104K50
C 1006	(A,44,48)		CCSRCH330J50
C 1007	(A,38,39)	10 µF	CCG1203
C 1008	(A,38,47)	10 µF	CCG1203
C 1009	(A,47,34)	10 µF	CCG1203
C 1021	(A,72,35)	10 µF	CCG1203
C 1022	(A,74,35)	10 µF	CCG1203
C 1023	(A,72,51)	10 µF	CCG1203
C 1024	(A,74,51)	10 µF	CCG1203
C 1025	(A,70,39)		CCSRCH100D50
C 1026	(A,69,43)		CKSRYB104K50
C 1027	(A,70,47)		CCSRCH100D50
C 1031	(A,56,36)	10 µF	CCG1203
C 1032	(A,57,36)	10 µF	CCG1203
C 1033	(A,55,52)	10 µF	CCG1203
C 1034	(A,57,52)	10 µF	CCG1203
C 1035	(A,55,39)		CCSRCH100D50
C 1036	(A,53,43)		CKSRYB104K50
C 1037	(A,55,47)		CCSRCH100D50
C 1041	(A,64,34)	10 µF	CCG1203
C 1042	(A,63,52)	10 µF	CCG1203
C 1043	(A,65,52)	10 µF	CCG1203
C 1044	(A,62,39)		CCSRCH100D50
C 1045	(A,61,43)		CKSRYB104K50
C 1046	(A,62,47)		CCSRCH100D50
C 1047	(A,62,34)	10 µF	CCG1203
C 1051	(B,69,43)		CKSRYB104K50
C 1061	(B,86,51)	10 µF	CCG1203
C 1062	(B,85,54)	10 µF	CCG1203

Circuit Symbol and No.	Part No.
C 1063 (B,84,51) 10 µF	CCG1203
C 1064 (B,83,54)	CKSQYB105K16
C 1065 (B,82,51) 10 µF	CCG1203
C 1066 (B,81,54) 10 µF	CCG1203
C 1067 (B,80,51)	CKSQYB105K16
C 1068 (B,79,54) 10 µF	CCG1203
C 1069 (B,78,51) 10 µF	CCG1203
C 1070 (B,77,54) 10 µF	CCG1203
C 1071 (A,85,64)	CEVW100M16
C 1072 (A,82,62)	CKSRYB104K25
C 1073 (A,81,62)	CKSRYB104K25
C 1074 (A,79,62)	CKSRYB104K25
C 1075 (B,91,60)	CKSQYB475K10
C 1076 (B,71,60)	CKSQYB475K10
C 1077 (B,91,62)	CKSQYB475K10
C 1078 (B,71,62)	CKSQYB475K10
C 1079 (B,91,64)	CKSQYB475K10
C 1080 (B,71,64)	CKSQYB475K10
C 1081 (B,91,66)	CKSQYB475K10
C 1082 (B,71,66)	CKSQYB475K10
C 1083 (B,90,77)	CKSQYB475K10
C 1084 (B,72,77)	CKSQYB475K10
C 1085 (A,85,70)	CEVW100M16
C 1086 (A,77,71)	CKSRYB104K25
C 1087 (B,78,73)	CKSRYB104K25
C 1088 (A,80,48)	CKSRYB103K50
C 1089 (A,83,48)	CKSRYB103K50
C 1091 (A,93,84)	CEVW100M16
C 1092 (A,88,84)	CEVW100M16
C 1093 (A,83,84)	CEVW100M16
C 1094 (A,78,84)	CEVW100M16
C 1095 (A,73,84)	CEVW100M16
C 1096 (A,68,84)	CEVW100M16
C 1097 (A,95,89)	CKSRYB222K50
C 1098 (A,85,89)	CKSRYB222K50
C 1099 (A,75,89)	CKSRYB222K50
C 1100 (A,87,89)	CKSRYB222K50
C 1101 (A,77,89)	CKSRYB222K50
C 1102 (A,67,89)	CKSRYB222K50
C 1111 (B,37,37)	CKSRYB105K10
C 1112 (B,37,38)	CKSRYB105K10
C 1113 (B,42,40)	CCSRCH221J50
C 1114 (B,43,43)	CKSRYB104K25
C 1115 (B,41,51)	CKSRYB103K50
C 1116 (B,36,47)	CKSRYB104K50
C 1117 (B,41,48)	CCSRCH151J50
C 1118 (B,36,48)	CCSRCH151J50
C 1119 (B,43,47)	CKSRYB105K10
C 1131 (B,88,83)	CKSRYB105K10
C 1132 (B,76,80)	CCSRCH221J50
C 1133 (B,86,80)	CCSRCH221J50
C 1134 (B,82,75)	CKSRYB104K25
C 1135 (A,81,77)	CEVW101M16
C 1136 (B,86,78)	CCSRCH221J50
C 1137 (B,76,78)	CCSRCH221J50
C 1138 (B,73,83)	CKSRYB105K10
C 1201 (B,93,104)	CKSRYB104K50
C 1202 (A,89,117)	CEVW470M16
C 1203 (A,92,108)	CEVW330M10
C 1205 (A,96,130)	CKSRYB104K50
C 1209 (B,76,119)	CKSQYB105K16
C 1210 (B,72,119)	CKSQYB105K16
C 1211 (B,74,119)	CKSQYB105K16
C 1212 (B,79,119)	CKSQYB105K16
C 1215 (B,76,122)	CKSRYB105K10
C 1216 (B,72,122)	CKSRYB105K10
C 1217 (B,74,122)	CKSRYB105K10
C 1218 (B,79,122)	CKSRYB105K10
C 1219 (A,26,113)	CKSRYB104K50
C 1220 (B,91,126)	CKSRYB105K10
C 1221 (A,73,130)	CKSQYB225K10
C 1222 (A,77,130)	CKSYB225K16
C 1223 (A,73,123)	CEVW100M16
C 1301 (A,16,34)	CKSRYB473K50
C 1302 (A,20,36) 10 µF	CCG1203
C 1303 (A,20,34) 10 µF	CCG1203
C 1304 (A,21,30)	CCSRCH5R0C50
C 1305 (A,15,28)	CKSRYB104K16
C 1306 (A,9,33)	CKSRYB105K10
C 1316 (B,17,22)	CKSRYB473K50
C 1317 (B,21,20) 10 µF	CCG1203
C 1318 (B,21,21) 10 µF	CCG1203
C 1319 (A,15,27)	CCSRCH5R0C50
C 1320 (B,15,28)	CKSRYB104K16
C 1331 (A,30,64)	CEVWNP100M10
C 1332 (A,25,64)	CEVWNP100M10
C 1333 (A,30,56)	CEVWNP100M10
C 1334 (A,25,56)	CEVWNP100M10
C 1338 (B,25,50)	CKSRYB104K25
C 1339 (B,22,51)	CKSRYB104K25
C 1341 (B,7,56)	CKSRYB473K50
C 1342 (B,7,48) 10 µF	CCG1203
C 1343 (B,9,48) 10 µF	CCG1203
C 1344 (B,7,41)	CKSRYB104K25
C 1351 (A,25,48)	CEVWNP100M10
C 1352 (A,20,48)	CEVWNP100M10
C 1353 (B,13,46)	CKSRYB104K25
C 1354 (B,16,42)	CKSRYB104K25
C 1361 (A,20,56)	CEVWNP100M10
C 1362 (A,11,54)	CEVW101M16
C 1363 (A,6,50)	CKSRYB104K25
C 1364 (A,13,47)	CEVW220M16
C 1365 (A,13,40)	CEVW221M10
C 1374 (A,26,34)	CEVQW101M10
C 1382 (A,31,39) 10 µF	CCG1203
C 1383 (A,33,39) 10 µF	CCG1203
C 1384 (A,31,46)	CKSRYB104K25
C 1402 (B,151,100) (EW5)	CCSRCH270J50
C 1403 (B,149,99) (EW5)	CCSRCH220J50
C 1404 (B,147,100) (EW5)	CCSRCH270J50
C 1405 (B,145,98) (EW5)	CCSRCH330J50
C 1406 (B,145,95) (EW5)	CCSRCH470J50
C 1407 (A,135,93) (EW5)	CKSRYB103K50
C 1408 (A,135,95) (EW5)	CKSRYB103K50
C 1409 (A,143,78) (EW5)	CKSRYB103K50
C 1410 (A,137,83) (EW5)	CKSRYB222K50
C 1411 (B,138,81) (EW5)	CKSRYB222K50
C 1412 (A,131,76) (EW5)	CKSRYB222K50
C 1413 (B,142,83) (EW5)	CKSRYB222K50
C 1415 (B,148,89) (EW5)	CCSRCH150J50

Circuit Symbol and No.		Part No.
C 1416	(B,144,82) (EW5)	CKSRYB103K50
C 1417	(A,138,76) (EW5)	CKSRYB222K50
C 1418	(B,151,89) (EW5)	CCSRCH270J50
C 1419	(A,137,71) (EW5)	CCSRCH220J50
C 1420	(A,143,73) (EW5)	CKSRYB103K50
C 1431	(A,144,61)	CEVW221M10
C 1432	(A,144,50)	CEVW221M10
C 1433	(B,141,65)	CKSRYB103K50
C 1434	(A,147,43)	CKSRYB103K50
C 1435	(A,148,33)	CKSRYB103K50
C 1437	(A,147,31) 10 μF	CCG1203
C 1438	(A,145,25)	CEVW470M16
C 1441	(A,162,73) (UC)	CCSRCH101J50
C 1451	(A,107,74) (EW5)	CKSRYB103K50
C 1453	(A,108,58) (EW5)	CKSRYB103K50
C 1454	(A,102,65) (EW5)	CEVW220M16
C 1455	(A,98,65) (EW5)	CKSRYB103K50
C 1456	(A,102,57) (EW5)	CEVW100M16
C 1457	(A,102,77) (EW5)	CKSRYB473K50
C 1458	(A,97,56) (EW5)	CKSRYB473K50
C 1459	(B,136,52) (EW5)	CCSRCH221J50
C 1603	(B,57,102)	CKSQYB105K16
C 1604	(A,56,119)	CKSRYB102K50
C 1606	(B,57,115)	CKSRYB104K50
C 1607	(B,37,106)	CKSRYB104K50
C 1608	(B,57,107)	CKSRYB102K50
C 1609	(B,35,106)	CKSRYB102K50
C 1610	(A,53,125)	CKSRYB102K50
C 1611	(B,37,115)	CKSRYB102K50
C 1612	(A,60,111)	CKSRYB102K50
C 1652	(A,48,74)	CEAT103M16
C 1653	(A,47,91) 3 300 μF/16 V	CCH1018
C 1661	(A,93,22)	CEVW221M16
C 1701	(B,31,129)	CKSRYB102K50
C 1702	(A,17,116)	CKSRYF103Z50
C 1703	(B,22,143)	CKSRYB104K25
C 1711	(B,44,9)	CKSRYB104K25
C 1712	(B,47,9)	CKSRYB104K25
C 1721	(A,119,131)	CKSRYB102K50
C 1722	(A,119,128)	CKSRYB102K50
C 1802	(B,134,116)	CKSRYB102K50
C 1803	(A,103,116) 10 μF	CCG1223
C 1804	(A,103,105) 10 μF	CCG1223
C 1821	(A,15,99)	CCSRCH102J50
C 1822	(A,19,99) 100 μF/16 V	CCH1565
C 1824	(A,15,96)	CKSRYB104K50
C 1831	(B,19,69)	CKSRYB104K50
C 1832	(A,17,64)	CEVW101M16
C 1833	(B,22,69)	CKSRYB104K50
C 1841	(A,19,88) 100 μF/16 V	CCH1565
C 1842	(A,15,88)	CKSRYB103K50
C 1846	(A,15,85)	CKSRYB104K50
C 1851	(A,99,14)	CKSRYB104K50
C 1852	(A,110,18)	CEVW101M16
C 1853	(A,118,29)	CKSRYB683K50
C 1861	(A,95,36)	CKSRYB104K50
C 1863	(A,91,48)	CKSRYB104K50
C 1864	(A,93,42)	CEVW101M25
C 1865	(A,105,49)	CKSRYB104K50
C 1866	(A,93,31)	CEVW101M25
C 1876	(A,39,60)	CKSRYB103K50
C 1877	(A,39,63)	CEVW100M16
C 1878	(A,41,56)	CKSRYB104K50
C 1891	(A,94,62) (EW5)	CEVW101M16
C 1892	(B,97,60) (EW5)	CKSRYB103K50
C 1894	(B,102,66) (EW5)	CKSRYB104K50

G

Unit Number : CWN2188(UC)
Unit Number : CWN2091(EW5)
Unit Name : Monitor Unit

MISCELLANEOUS

IC 5010	(A,20,42) 1 Chip or Gate	TC7SH32FUS1
IC 5011	(A,27,51) IC	RB5P0090M
IC 5012	(A,28,35) IC	TC7SET04FUS1
IC 5060	(A,77,33) IC	TC74VHC221AFTS1
IC 5100	(A,54,36) IC	LZ9FE30
IC 5101	(B,65,32) IC	NJM2107F
IC 5181	(A,31,15) IC	BD6171KV
IC 5300	(A,111,34) IC	PE5584A
IC 5303	(A,124,23) IC	S-93C46BD0I-J8
IC 5304	(B,121,46) IC	S-80835CNNB-B8U
IC 5307	(B,12,86) Remote IC	GP1UX51RK
IC 5650	(A,57,57) IC	PD6567A
IC 5651	(A,68,52) IC	TC7SH08FUS1
IC 5681	(A,71,72) IC	NJM2903V
IC 5700	(A,132,32) IC	M62343FP
IC 5900	(B,103,51) IC	TA78L05F
IC 5901	(B,77,67) IC	TC7SH08FUS1
IC 5902	(A,80,65) IC	OZ961ISN
Q 5100	(A,70,34) Transistor	2SC2411K
Q 5180	(B,47,15) Transistor	DTC114EUA
Q 5200	(A,29,25) FET	RSQ035P03
Q 5210	(A,24,21) FET	RSQ035P03
Q 5300	(A,95,17) Transistor	2SC4617
Q 5301	(B,112,25) Transistor	2SC4617
Q 5360	(A,110,18) Transistor	FMG12
Q 5361	(A,107,18) Transistor	DTA123JU
Q 5362	(A,113,18) Transistor	DTA123JU
Q 5363	(B,108,18) Transistor	DTC114EUA
Q 5364	(B,113,17) Transistor	DTC114EUA
Q 5650	(B,55,70) Transistor	2SC4617
Q 5700	(B,133,51) Transistor	UMX1N
Q 5701	(B,127,49) Transistor	UMX1N
Q 5702	(B,129,30) Transistor	UMX1N
Q 5703	(B,128,42) Transistor	UMX1N
Q 5704	(B,121,34) Transistor	UMX1N
Q 5705	(B,135,30) Transistor	UMX1N
Q 5900	(B,94,56) Transistor	2SC4617
Q 5901	(B,92,56) Transistor	2SC4617
Q 5902	(B,83,62) Transistor	DTA144EE
Q 5903	(A,89,68) FET	TS8M1
Q 5904	(A,89,61) FET	TS8M1
Q 5905	(A,111,73) Transistor	2SC4617
Q 5906	(A,114,73) Transistor	2SC4617
Q 5907	(A,119,76) Transistor	UMX2N
Q 5908	(B,85,60) Transistor	2SC4617

Circuit Symbol and No.			Part No.
D 5060	(A,75,28)	Diode	1SS355
D 5061	(A,73,39)	Diode	1SS355
D 5100	(A,47,28)	Diode	RB500V-40
D 5101	(A,61,29)	Diode	UDZS5R1(B)
D 5102	(A,67,38)	Diode	RB548W
D 5103	(A,64,29)	Diode	MA335
D 5104	(B,70,27)	Diode	UDZS5R1(B)
D 5105	(B,67,19)	Diode	RB500V-40
D 5183	(A,41,18)	Diode	RB548W
D 5184	(A,38,19)	Diode	RB548W
D 5185	(A,41,14)	Diode	RB548W
D 5186	(A,41,12)	Diode	RB548W
D 5187	(A,41,9)	Diode	RB548W
D 5200	(A,33,27)	Diode	RB160M-30
D 5210	(A,20,26)	Diode	RSX201L-30
D 5231	(A,32,8)	Diode	RB500V-40
D 5233	(A,32,6)	Diode	RB500V-40
D 5234	(A,28,7)	Diode	RB500V-40
D 5360	(B,109,16)	Diode	MA111
D 5361	(B,116,13)	Diode	UDZS5R6(B)
D 5364	(B,114,13)	Diode	UDZS5R6(B)
D 5650	(A,53,48)	Diode	1SS355
D 5900	(B,98,56)	Diode	UDZS6R2(B)
D 5902	(B,78,60)	Diode	RB751V-40
D 5903	(B,93,66)	Diode	HZU6R2(B3)
D 5904	(B,93,61)	Diode	HZU6R2(B3)
D 5905	(A,109,75)	Diode	UDZS8R2(B)
D 5906	(A,132,55)	Diode	MA147
D 5907	(A,122,54)	Diode	HZU6R2(B3)
D 5908	(A,128,55)	Diode	MA147
L 5010	(A,11,59)	Chip Coil	LCTAW100J2520
L 5011	(A,17,34)	Chip Coil	LCTAW100J2520
L 5012	(A,13,44)	Chip Coil	LCTAW100J2520
L 5013	(A,22,33)	Chip Coil	LCTAW100J2520
L 5014	(A,24,37)	Inductor	CTF1334
L 5060	(A,75,22)	Chip Coil	LCTAW100J2520
L 5100	(A,44,27)	Chip Coil	LCTAW100J2520
L 5101	(A,63,41)	Inductor	LCTAW150J2520
L 5102	(A,70,28)	Inductor	LCTAW2R7J2520
L 5103	(B,65,20)	Chip Inductor(10U)	DTL1096
L 5104	(B,65,22)	Chip Inductor(10U)	DTL1096
L 5105	(B,65,18)	Inductor	LCTC120K2125
L 5106	(B,52,18)	Inductor	LCTC120K2125
L 5181	(A,42,16)	Chip Inductor(10U)	DTL1096
L 5200	(A,68,6)	Inductor	CTF1488
L 5203	(A,37,25)	Choke Coil 68 µH	CTH1318
L 5207	(A,44,9)	Inductor	CTF1635
L 5214	(A,19,19)	Choke Coil 18 µH	CTH1250
L 5230	(A,24,11)	Inductor	CTF1635
L 5300	(A,85,19)	Inductor	CTF1635
L 5650	(A,42,45)	Chip Coil	LCTAW100J2520
L 5651	(A,58,73)	Inductor	LCKBW100K2520
L 5700	(A,129,27)	Chip Coil	LCTAW100J2520
T 5900	(A,116,64)	Transformer	CTT1130
TH5300	(B,107,40)	Thermistor	CCX1051
X 5010	(A,22,68)	Radiator 4.43 MHz(EW5)	CSS1726
X 5011	(A,36,66)	Radiator 3.58 MHz	CSS1725
X 5300	(A,111,45)	Radiator 12.58 MHz	CSS1601
VR5101	(A,68,25)	Semi-fixed 2.2 kΩ(OB)	CCP1485
VR5900	(A,79,57)	Semi-fixed 15 kΩ(OB)	CCP1490

RESISTORS

Circuit Symbol and No.		Part No.
R 5010	(A,32,41)	RS1/16S9100D
R 5011	(A,32,40)	RS1/16S1301D
R 5013	(B,23,49)	RS1/16S102J
R 5014	(B,24,45)	RS1/16S103J
R 5015	(B,25,49)	RS1/16S474J
R 5016	(A,28,40)	RS1/16S0R0J
R 5017	(A,19,46)	RS1/16S101J
R 5018	(A,26,40)	RS1/16S561J
R 5019	(B,43,47)	RS1/16S1501D
R 5020	(B,41,47)	RS1/16S1501D
R 5021	(B,43,50)	RS1/16S1501D
R 5023	(B,23,51)	RS1/16S103J
R 5026	(B,24,54)	RS1/16S0R0J
R 5027	(B,27,45)	RS1/16S1802F
R 5028	(B,26,52)	RS1/16S0R0J
R 5029	(B,28,50)	RS1/16S0R0J
R 5030	(A,14,58)	RS1/16S103J
R 5031	(A,23,61)	RS1/16S101J
R 5032	(A,24,61)	RS1/16S101J
R 5033	(A,26,61)	RS1/16S101J
R 5034	(A,38,52)	RS1/16S105J
R 5035	(A,38,57)	RS1/16S105J
R 5036	(A,26,64)	RS1/16S681J
R 5037	(A,30,62)	RS1/16S222J
R 5038	(B,29,55)	RS1/16S822J
R 5039	(B,30,58)	RS1/16S562J
R 5040	(A,24,35)	RS1/16S391J
R 5042	(B,49,47)	RS1/16S6200D
R 5043	(B,46,48)	RS1/16S6200D
R 5044	(B,49,49)	RS1/16S6200D
R 5045	(B,42,43)	RS1/16S0R0J
R 5060	(A,80,39)	RS1/16S0R0J
R 5061	(A,80,36)	RS1/16S101J
R 5062	(A,75,26)	RS1/16S104J
R 5063	(A,77,38)	RS1/16S101J
R 5064	(A,74,37)	RS1/16S3001D
R 5065	(A,71,37)	RS1/16S82R0F
R 5092	(A,77,44)	RS1/16S0R0J
R 5100	(A,42,39)	RS1/16S0R0J
R 5101	(B,42,39)	RS1/16S0R0J
R 5102	(A,42,38)	RS1/16S0R0J
R 5103	(B,42,38)	RS1/16S0R0J
R 5104	(A,42,36)	RS1/16S0R0J
R 5106	(A,46,40)	RS1/16S1003F
R 5107	(A,45,39)	RS1/16S101J
R 5108	(B,45,39)	RS1/16S101J
R 5109	(A,45,38)	RS1/16S101J
R 5110	(B,45,38)	RS1/16S101J
R 5111	(A,44,36)	RS1/16S101J
R 5112	(B,48,34)	RS1/16S0R0J
R 5113	(A,50,44)	RS1/16S5101D
R 5114	(A,47,47)	RS1/16S0R0J
R 5115	(B,59,37)	RS1/16S224J
R 5116	(A,54,28)	RS1/16S101J
R 5117	(A,54,27)	RS1/16S0R0J
R 5118	(B,51,38)	RS1/16S0R0J
R 5119	(B,51,40)	RS1/16S101J
R 5120	(B,52,40)	RS1/16S101J

Circuit Symbol and No.			Part No.
R	5121	(A,56,28)	RS1/16S101J
R	5122	(A,57,26)	RS1/16S0R0J
R	5123	(B,54,40)	RS1/16S101J
R	5124	(A,58,28)	RS1/16S101J
R	5125	(B,54,38)	RS1/16S0R0J
R	5126	(B,55,40)	RS1/16S101J
R	5127	(B,59,28)	RS1/16S101J
R	5128	(B,59,26)	RS1/16S0R0J
R	5129	(B,55,38)	RS1/16S0R0J
R	5130	(B,58,30)	RS1/16S101J
R	5131	(B,58,27)	RS1/16S0R0J
R	5132	(A,63,34)	RS1/16S105J
R	5133	(B,60,32)	RS1/16S0R0J
R	5134	(A,62,39)	RS1/16S391J
R	5136	(B,61,24)	RS1/16S103J
R	5137	(A,61,26)	RS1/16S3901D
R	5138	(B,61,30)	RS1/16S3901D
R	5139	(A,62,33)	RS1/16S4702D
R	5140	(A,62,32)	RS1/16S243J
R	5141	(A,65,32)	RS1/16S6802D
R	5142	(A,67,37)	RS1/16S564J
R	5143	(A,67,42)	RS1/16S564J
R	5144	(A,69,32)	RS1/16S683J
R	5145	(B,70,30)	RS1/16S105J
R	5146	(A,69,41)	RS1/16S0R0J
R	5147	(A,67,29)	RS1/16S103J
R	5148	(B,66,26)	RS1/16S272J
R	5149	(B,65,34)	RS1/16S272J
R	5150	(B,70,33)	RS1/16S332J
R	5151	(B,65,35)	RS1/16S101J
R	5152	(B,70,35)	RS1/16S331J
R	5153	(A,46,13)	RS1/16S103J
R	5154	(A,44,6)	RS1/16S273J
R	5155	(B,57,20)	RS1/16S333J
R	5156	(B,69,24)	RS1/16S152J
R	5157	(B,61,37)	RS1/16S101J
R	5158	(B,62,39)	RS1/16S0R0J
R	5159	(A,71,26)	RS1/16S0R0J
R	5160	(A,65,34)	RS1/16S0R0J
R	5180	(B,39,16)	RS1/16S2703D
R	5181	(B,40,19)	RS1/16S3303D
R	5182	(B,38,20)	RS1/16S2202F
R	5183	(B,38,18)	RS1/16S1601F
R	5184	(B,37,16)	RS1/16S6202D
R	5185	(A,38,7)	RS1/16S3300F
R	5186	(A,38,9)	RS1/16S3302F
R	5187	(A,36,9)	RS1/16S1002F
R	5188	(B,29,20)	RS1/16S563J
R	5189	(B,42,17)	RS1/16S223J
R	5191	(B,31,24)	RS1/16S150J
R	5192	(A,28,23)	RS1/16S150J
R	5193	(B,27,20)	RS1/16S273J
R	5194	(A,20,14)	RS1/16S1500F
R	5195	(A,18,14)	RS1/16S1201F
R	5196	(A,20,12)	RS1/16S1500F
R	5197	(B,43,15)	RS1/16S0R0J
R	5200	(A,70,4)	RS1/16S0R0J
R	5201	(B,24,16)	RS1/16S682J
R	5204	(A,135,19)	RS1/16S0R0J
R	5216	(A,24,17)	RS1/16S333J

Circuit Symbol and No.			Part No.
R	5217	(A,22,14)	RS1/16S102J
R	5218	(B,23,12)	RS1/16S684J
R	5219	(B,35,30)	RS1/16S6801F
R	5220	(B,21,16)	RS1/16S1001F
R	5221	(B,24,19)	RS1/16S2000D
R	5222	(B,22,13)	RS1/16S182J
R	5230	(A,26,9)	RS1/16S2001F
R	5231	(A,24,7)	RS1/16S4700F
R	5300	(A,128,50)	RS1/16S473J
R	5301	(A,128,49)	RS1/16S473J
R	5302	(A,92,16)	RS1/16S473J
R	5303	(A,92,18)	RS1/16S223J
R	5304	(A,104,18)	RS1/16S473J
R	5305	(A,100,33)	RAB4C471J
R	5306	(A,122,28)	RS1/16S471J
R	5308	(A,123,36)	RAB4C471J
R	5309	(A,115,23)	RAB4C471J
R	5310	(A,124,41)	RS1/16S473J
R	5311	(B,100,25)	RAB4C473J
R	5312	(B,107,42)	RS1/16S153J
R	5313	(A,107,46)	RAB4C123J
R	5314	(A,111,23)	RS1/16S473J
R	5315	(B,112,23)	RS1/16S103J
R	5316	(B,112,40)	RS1/16S473J
R	5317	(A,112,23)	RS1/16S471J
R	5320	(B,109,23)	RS1/16S102J
R	5321	(A,118,45)	RS1/16S0R0J
R	5322	(A,123,15)	RS1/16S102J
R	5323	(A,120,46)	RS1/16S0R0J
R	5324	(B,116,35)	RS1/16S473J
R	5325	(A,109,23)	RS1/16S471J
R	5326	(A,101,39)	RS1/16S103J
R	5329	(B,101,33)	RS1/16S0R0J
R	5330	(A,123,33)	RAB4C102J
R	5331	(B,63,29)	RS1/16S104J
R	5338	(B,119,49)	RS1/16S0R0J
R	5341	(B,121,49)	RS1/16S103J
R	5343	(A,120,22)	RS1/16S473J
R	5344	(A,100,29)	RAB4C471J
R	5345	(A,99,39)	RS1/16S471J
R	5346	(A,98,38)	RS1/16S471J
R	5350	(A,122,30)	RS1/16S103J
R	5351	(A,127,46) (EW5)	RS1/16S473J
R	5352	(A,128,46) (UC)	RS1/16S473J
R	5353	(A,131,46)	RS1/16S473J
R	5360	(A,104,10)	RS1/16S102J
R	5365	(A,103,10)	RS1/16S102J
R	5366	(B,108,13)	RS1/16S105J
R	5367	(B,112,13)	RS1/16S105J
R	5650	(B,56,67)	RS1/16S362J
R	5651	(B,59,66)	RS1/16S362J
R	5652	(B,57,67)	RS1/16S182J
R	5653	(B,51,71)	RS1/16S102J
R	5654	(B,55,72)	RS1/16S103J
R	5655	(B,60,66)	RS1/16S362J
R	5656	(B,59,68)	RS1/16S182J
R	5657	(B,57,69)	RS1/16S103J
R	5658	(B,61,66)	RS1/16S362J
R	5659	(B,62,68)	RS1/16S182J
R	5660	(B,63,66)	RS1/16S362J

Circuit Symbol and No.				Part No.
R	5661	(B,64,70)		RS1/16S301J
R	5662	(B,47,67)		RS1/16S101J
R	5665	(A,53,50)		RS1/16S474J
R	5672	(B,57,60)		RS1/16S471J
R	5674	(B,61,60)		RS1/16S0R0J
R	5675	(B,63,60)		RS1/16S101J
R	5676	(A,14,75)		RS1/16S470J
R	5678	(A,66,49)		RS1/16S101J
R	5680	(A,66,72)		RS1/16S153J
R	5681	(A,64,74)		RS1/16S153J
R	5682	(A,66,76)		RS1/16S912J
R	5683	(A,64,76)		RS1/16S392J
R	5684	(A,67,76)		RS1/16S2703F
R	5685	(A,74,72)		RS1/16S103J
R	5693	(A,15,75)		RS1/16S470J
R	5702	(B,136,50)		RS1/16S224J
R	5703	(B,125,39)		RS1/16S102J
R	5704	(B,138,50)		RS1/16S222J
R	5705	(B,129,49)		RS1/16S224J
R	5706	(B,123,38)		RS1/16S102J
R	5707	(B,131,49)		RS1/16S222J
R	5709	(B,130,46)		RS1/16S101J
R	5710	(B,127,30)		RS1/16S224J
R	5711	(B,129,32)		RS1/16S102J
R	5712	(B,126,30)		RS1/16S222J
R	5713	(B,130,37)		RS1/10S121J
R	5714	(B,128,35)		RS1/10S101J
R	5717	(B,119,37)		RS1/16S101J
R	5720	(B,21,49)		RS1/16S101J
R	5721	(B,23,45)		RS1/16S0R0J
R	5724	(B,120,32)		RS1/10S121J
R	5725	(B,124,32)		RS1/10S151J
R	5728	(B,132,30)		RS1/16S101J
R	5730	(B,133,29)		RS1/10S151J
R	5731	(B,131,27)		RS1/10S181J
R	5751	(B,132,12)		RS1/16S0R0J
R	5752	(B,134,14)		RS1/16S0R0J
R	5753	(B,131,14)		RS1/16S0R0J
R	5754	(B,131,16)		RS1/16S0R0J
R	5755	(A,128,10)		RS1/16S0R0J
R	5900	(B,96,56)		RS1/16S103J
R	5901	(B,95,54)		RS1/16S104J
R	5902	(B,97,54)		RS1/16S473J
R	5903	(B,90,56)		RS1/16S105J
R	5904	(B,85,58)		RS1/16S102J
R	5905	(B,86,56)		RS1/16S473J
R	5906	(B,83,65)		RS1/16S363J
R	5907	(B,84,70)		RS1/16S513J
R	5908	(B,132,55)		RS1/16S105J
R	5909	(B,77,63)		RS1/16S102J
R	5910	(A,83,57)		RS1/16S5602D
R	5911	(B,93,68)		RS1/16S103J
R	5912	(B,92,63)		RS1/16S103J
R	5913	(A,108,73)		RS1/16S103J
R	5914	(A,109,73)		RS1/16S104J
R	5915	(A,113,76)		RS1/16S621J
R	5916	(A,109,77)		RS1/16S473J
R	5917	(A,116,75)		RS1/16S621J
R	5918	(A,120,73)		RS1/16S101J
R	5919	(A,118,73)		RS1/16S101J
R	5920	(A,120,54)		RS1/16S821J
R	5922	(A,124,55)		RS1/16S4700D
R	5935	(A,98,55)		RS1/16S0R0J
R	5997	(A,43,75)	(EW5)	RS1/10S0R0J
R	5998	(A,48,75)	(UC)	RS1/10S0R0J

CAPACITORS

Circuit Symbol and No.				Part No.
C	5010	(A,17,58)	10 μF	CCG1203
C	5012	(A,21,37)	47 μF	CCG1233
C	5014	(B,26,45)		CCSRCH821J50
C	5015	(A,25,42)		CKSRYB105K10
C	5016	(B,29,45)		CKSRYB104K50
C	5019	(A,33,43)	10 μF	CCG1203
C	5020	(A,15,48)		CEVW100M25
C	5021	(B,21,54)		CKSRYB104K50
C	5022	(A,37,47)		CKSRYB104K16
C	5023	(B,37,48)		CKSRYB104K16
C	5024	(A,37,49)		CKSRYB104K16
C	5025	(B,37,50)		CKSRYB104K50
C	5026	(A,37,50)		CKSRYB104K50
C	5027	(B,37,51)		CKSRYB104K50
C	5028	(A,15,54)		CEVW100M25
C	5029	(A,38,53)		CKSRYB105K10
C	5030	(A,38,54)		CKSRYB682K25
C	5031	(A,38,56)		CKSRYB104K50
C	5032	(A,32,60)		CKSRYB103K50
C	5033	(B,28,58)		CKSRYB103K50
C	5034	(B,29,58)		CKSRYB474K16
C	5035	(B,24,57)		CKSRYB104K50
C	5036	(A,24,64)		CCSRCH8R0D50
C	5037	(A,33,62)		CCSRCH8R0D50
C	5039	(A,26,33)		CKSRYB104K50
C	5060	(A,78,27)		CCSRCH391J50
C	5061	(A,76,38)	330 pF	CCG1247
C	5062	(A,75,25)		CKSRYB105K10
C	5100	(B,50,42)		CKSRYB104K50
C	5101	(B,48,40)		CKSRYB104K50
C	5103	(A,45,43)		CKSRYB222K50
C	5104	(A,44,34)	10 μF	CCG1203
C	5105	(A,47,44)		CKSRYB104K50
C	5106	(A,54,46)	330 pF	CCG1247
C	5107	(B,51,43)		CKSRYB104K50
C	5108	(B,54,28)		CKSRYB104K50
C	5109	(B,53,31)		CKSRYB104K50
C	5110	(A,54,44)		CKSRYB104K50
C	5111	(B,54,34)		CKSRYB104K50
C	5112	(B,57,39)		CKSRYB224K16
C	5113	(B,56,29)		CKSRYB104K50
C	5114	(B,55,31)		CKSRYB104K50
C	5115	(B,57,42)		CKSRYB104K50
C	5116	(B,59,42)		CKSRYB104K50
C	5117	(B,59,41)		CKSRYB104K50
C	5118	(B,59,39)		CKSRYB104K50
C	5119	(B,57,36)		CKSRYB104K50
C	5120	(B,57,34)		CKSRYB104K50
C	5121	(A,59,28)		CKSRYB105K10
C	5122	(A,63,36)		CKSRYB104K50
C	5123	(A,63,39)		CCSRCH330J50
C	5124	(A,65,39)		CCSRCH330J50

Circuit Symbol and No.			Part No.
C 5125	(A,68,43)		CCSRCH102J50
C 5126	(B,69,30)		CCSRCH561J50
C 5127	(A,69,30)		CKSRYB104K50
C 5128	(B,62,32)		CKSRYB104K50
C 5129	(B,66,28)		CKSRYB104K50
C 5130	(B,59,35)		CKSRYB105K10
C 5131	(A,71,31)		CCSRCH102J50
C 5132	(A,73,31)		CCSRCH101J50
C 5133	(B,67,26)		CKSRYB104K50
C 5134	(A,67,34)		CCSRCH221J50
C 5135	(B,70,34)		CCSRCH331J50
C 5136	(B,69,18)	10 µF	CCG1203
C 5137	(A,16,38)	10 µF	CCG1223
C 5138	(A,11,38)		CEVW101M16
C 5139	(A,64,27)		CCSRCK2R0C50
C 5142	(B,61,20)		CKSRYB105K10
C 5143	(B,61,22)		CKSRYB105K10
C 5144	(B,54,20)		CKSRYB104K50
C 5145	(B,61,18)		CKSRYB105K10
C 5181	(B,43,18)		CKSQYF105Z25
C 5182	(B,35,18)		CKSQYF105Z25
C 5183	(A,38,17)		CKSRYB104K25
C 5184	(A,38,16)		CKSQYF105Z25
C 5188	(B,50,12)		CKSQYB105K16
C 5190	(B,54,12)		CKSQYF225Z16
C 5191	(A,43,13)		CKSQYF225Z16
C 5192	(B,35,13)		CKSQYF105Z25
C 5193	(A,38,12)		CKSRYF474Z16
C 5194	(A,38,13)		CKSRYF474Z16
C 5195	(B,31,14)		CKSYF475Z16
C 5196	(A,40,20)		CKSRYB472K50
C 5197	(A,41,20)		CKSRYB472K50
C 5199	(A,38,10)		CKSRYF474Z16
C 5200	(B,52,12)		CKSQYB105K16
C 5201	(A,36,30)	33 µF/10 V	CCH1586
C 5202	(A,36,33)		CKSRYB104K25
C 5203	(B,29,29)		CKSRYB103K50
C 5204	(A,29,29)	10 µF	CCG1223
C 5205	(B,33,19)		CKSRYB103K50
C 5206	(B,32,19)		CKSRYB105K10
C 5207	(A,41,6)		CKSQYF105Z25
C 5208	(B,30,17)		CCSRCH102J50
C 5209	(B,30,20)		CKSRYB104K25
C 5210	(A,70,7)		CKSQYF224Z25
C 5211	(B,31,22)		CKSRYB105K10
C 5212	(A,24,28)	10 µF	CCG1223
C 5213	(B,26,20)		CKSRYB104K25
C 5214	(A,24,24)	10 µF	CCG1223
C 5215	(A,14,25)		CKSRYB104K25
C 5216	(A,16,27)	68 µF/10 V	CCH1635
C 5217	(A,23,17)		CCSRCH101J50
C 5218	(B,24,26)		CKSRYB103K50
C 5219	(B,26,18)		CKSRYB103K50
C 5221	(A,21,14)		CCSRCH331J50
C 5223	(B,28,17)		CKSRYB393K16
C 5224	(B,22,10)		CKSRYB103K50
C 5226	(B,22,16)		CKSRYB473K50
C 5228	(B,26,16)		CKSRYB393K16
C 5230	(B,32,12)		CCSRCH102J50
C 5231	(A,21,10)		CKSRYB104K25

Circuit Symbol and No.			Part No.
C 5232	(A,22,11)	10 µF	CCG1203
C 5233	(B,26,14)		CKSRYB105K10
C 5234	(A,23,9)		CKSRYB104K25
C 5235	(B,31,16)		CKSRYB103K50
C 5242	(B,30,12)		CKSRYB104K25
C 5247	(B,28,12)		CKSRYB104K25
C 5249	(B,27,12)		CKSRYB104K25
C 5300	(A,87,28)		CEVW330M10
C 5301	(B,107,25)		CKSRYF104Z16
C 5302	(B,95,24)		CKSRYF104Z16
C 5303	(B,105,25)		CKSRYF104Z16
C 5304	(B,107,39)		CKSRYB104K25
C 5306	(B,112,22)		CKSRYB105K6R3
C 5307	(B,112,27)		CKSRYF104Z50
C 5308	(A,114,45)		CKSRYF104Z16
C 5312	(B,119,46)		CKSRYB103K50
C 5313	(B,123,46)		CKSRYF104Z16
C 5314	(B,121,21)		CKSRYF104Z16
C 5360	(A,104,12)		CKSRYB473K50
C 5361	(A,103,12)		CKSRYB473K50
C 5362	(B,117,13)		CKSRYB102K50
C 5363	(B,119,13)		CKSRYB102K50
C 5364	(B,105,18)		CKSRYB104K10
C 5366	(B,110,13)		CKSRYB102K50
C 5367	(B,111,13)		CKSRYB102K50
C 5651	(B,61,70)	10 µF	CCG1203
C 5652	(B,53,71)		CKSRYB104K16
C 5654	(A,43,56)	10 µF	CCG1203
C 5655	(A,47,54)		CKSRYB104K50
C 5659	(A,55,50)		CKSRYB474K10
C 5660	(B,59,62)		CKSRYB104K50
C 5661	(A,43,48)	10 µF	CCG1203
C 5663	(B,19,42)		CKSRYB104K50
C 5665	(A,67,72)		CCSRCH102J50
C 5666	(B,68,71)		CFHXSQ562J16
C 5667	(A,60,73)	10 µF	CCG1203
C 5668	(A,62,67)		CEVW330M10
C 5669	(A,68,55)		CKSRYB105K10
C 5670	(A,17,75)		CKSRYB104K16
C 5700	(B,137,52)		CKSQYB475K6R3
C 5702	(A,132,29)	10 µF	CCG1203
C 5705	(B,130,51)		CKSQYB475K6R3
C 5707	(B,126,28)		CKSQYB475K6R3
C 5708	(B,134,22)		CKSRYB102K50
C 5709	(B,134,20)		CKSRYB102K50
C 5901	(A,94,52)	10 µF	CCG1223
C 5902	(B,100,54)		CKSRYB104K25
C 5903	(B,99,49)		CKSRYB105K10
C 5904	(B,88,59)		CKSRYB104K25
C 5905	(A,73,64)		CKSRYB104K25
C 5906	(A,75,69)		CKSRYB105K10
C 5907	(A,73,67)		CKSRYB474K10
C 5908	(A,73,66)		CKSRYB105K10
C 5909	(A,75,62)		CKSRYB562K50
C 5910	(A,76,60)		CKSRYB152K50
C 5911	(B,79,67)		CKSRYB104K25
C 5912	(B,88,64)		CKSRYB473K50
C 5913	(B,134,55)		CKSRYB103K50
C 5914	(A,80,59)		CKSRYB221K50
C 5915	(B,89,69)		CKSRYB473K50

Circuit Symbol and No.			Part No.
C 5916	(A,89,57)	10 µF	CCG1223
C 5917	(A,89,64)	10 µF	CCG1223
C 5918	(A,95,70)		CKSQYB105K16
C 5919	(A,95,72)		CKSQYB105K16
C 5920	(A,116,73)		CKSRYB104K25
C 5921	(A,137,58)	15 pF	CCG1194
C 5922	(B,137,55)		CKSRYB153K50

Keyboard Unit
Consists of
Key PCB
AV Mini Jack PCB

HI

Unit Number :
Unit Name : Keyboard Unit

MISCELLANEOUS

D 5501	(A,12,60)	LED	NSSM025-6502
D 5551	(B,5,6)	Diode	MALS068X
D 5552	(B,8,18)	Diode	MALS068X
D 5553	(B,11,6)	Diode	MALS068X
D 5554	(B,8,6)	Diode	MALS068X
S 5501	(A,11,26)	Push Switch	CSG1155
S 5502	(A,12,6)	Push Switch	CSG1155
S 5503	(A,12,47)	Push Switch	CSG1155
S 5504	(A,11,68)	Push Switch	CSG1155
S 5505	(A,12,74)	Push Switch	CSG1155
S 5506	(A,23,76)	Push Switch	CSG1155
S 5507	(A,12,37)	Rotary Switch(VOLUME)	CSD1142

RESISTORS

R 5501	(A,16,46)		RS1/16S303J
R 5502	(A,14,66)		RS1/16S303J
R 5503	(A,11,8)		RS1/16S183J
R 5504	(A,12,20)		RS1/16S103J
R 5505	(A,12,18)		RS1/16S822J
R 5506	(B,10,50)		RS1/16S102J
R 5507	(B,14,50)		RS1/16S102J

CAPACITORS

C 5503	(A,11,54)		CKSRYB104K25
C 5504	(A,12,56)		CKSRYB104K25
C 5505	(B,11,50)		CKSRYB103K50
C 5506	(B,13,50)		CKSRYB103K50

D

Unit Number : CWX3401
Unit Name : DVD Core Unit

MISCELLANEOUS

Circuit Symbol and No.			Part No.
IC 1001	(B,79,55)	IC	BD9851EFV
IC 1003	(B,72,42)	IC	S-80859CNNB-B9K
IC 1004	(B,75,48)	Regulator IC	NJM2880U1-05
IC 1005	(B,61,58)	IC	S-L2980A50MC-C7J
IC 1201	(A,26,15)	IC	BD7996EFV
IC 1301	(B,90,27)	IC	TC7SZ125FU
IC 1351	(B,86,27)	IC	TC7SZ08FU
IC 1352	(B,79,14)	IC	TC74LCX16373FT
IC 1401	(B,61,32)	Flash ROM Unit	CWW1428
IC 1402	(B,37,10)	Flash ROM Unit	CWW1429
IC 1403	(B,47,29)	IC	TC7SZ32FU
IC 1481	(B,60,12)	IC	EDS1232AATA-75
IC 1501	(A,60,19)	IC	MN2DS0016AAUB
IC 1801	(A,70,53)	D/A Converter	PCM1753DBQ
Q 1001	(B,77,67)	FET	RSQ030P03
Q 1003	(B,85,67)	FET	QS5U27
Q 1101	(B,62,50)	Transistor	2SC4081
Q 1102	(B,68,50)	Transistor	2SC4081
Q 1103	(B,60,45)	Transistor	2SB1260
Q 1104	(B,67,45)	Transistor	2SB1260
D 1001	(B,80,64)	Chip Diode	RB050L-40
D 1002	(A,89,67)	Diode	1SR154-400
D 1301	(B,13,10)	Chip LED	CL205IRXTU
L 1001	(B,73,62)	Inductor	CTF1678
L 1002	(B,83,72)	Inductor	CTF1677
L 1003	(B,86,62)	Inductor	CTF1681
L 1004	(B,63,60)	Inductor	CTF1558
L 1005	(B,81,49)	Inductor	CTF1558
L 1101	(B,66,54)	Inductor	CTF1305
L 1482	(B,77,29)	Inductor	CTF1473
L 1502	(A,71,47)	Inductor	CTF1378
L 1503	(A,60,47)	Inductor	CTF1487
L 1504	(A,35,10)	Inductor	CTF1387
L 1511	(A,63,3)	Inductor	CTF1680
L 1601	(A,41,23)	Inductor	CTF1473
L 1602	(A,55,42)	Inductor	CTF1473
L 1603	(A,54,42)	Inductor	CTF1473
L 1604	(A,52,42)	Inductor	CTF1473
L 1605	(A,38,32)	Inductor	CTF1395
L 1671	(A,41,19)	Inductor	CTF1473
L 1672	(A,41,20)	Inductor	CTF1473
L 1673	(A,41,21)	Inductor	CTF1473
L 1801	(A,70,61)	Inductor	CTF1473
L 1901	(A,91,73)	Inductor	CTF1487
L 1902	(A,91,62)	Inductor	CTF1558
X 1501	(A,40,16)	Clystal 27.000 MHz	CSS1714
VR1671	(A,35,20)	Semi-fixed 10 kΩ(B)	CCP1448
EF1501	(A,68,47)	Chip EMI Filter	DTL1106
EF1502	(A,61,45)	Chip EMI Filter	DTL1106
EF1901	(A,87,74)	Chip EMI Filter	DTF1106
EF1903	(A,91,65)	Chip EMI Filter	DTL1106

RESISTORS

R 1001	(B,70,55)		RS1/16SS101J
R 1002	(B,72,51)		RS1/16SS103J
R 1003	(B,72,55)		RS1/16SS122J
R 1005	(B,72,52)		RS1/16SS153J
R 1006	(B,73,54)		RS1/16SS471J
R 1007	(B,73,55)		RS1/16SS8201D
R 1008	(B,70,56)		RS1/16SS4702D
R 1009	(B,72,56)		RS1/16SS561J
R 1010	(B,74,51)		RS1/16SS472J
R 1011	(B,72,40)		RS1/16SS104J
R 1013	(B,87,54)		RS1/16SS682J

Circuit Symbol and No.		Part No.
R 1017	(B,88,54)	RS1/16SS1002D
R 1018	(B,88,53)	RS1/16SS472J
R 1019	(B,87,53)	RS1/16SS2202D
R 1020	(B,87,52)	RS1/16SS102J
R 1021	(B,87,51)	RS1/16SS101J
R 1026	(B,78,61)	RS1/16SS100J
R 1027	(B,77,61)	RS1/16SS100J
R 1101	(B,63,53)	RS1/16SS391J
R 1102	(B,63,47)	RS1/16SS511J
R 1103	(B,67,53)	RS1/16SS391J
R 1104	(B,69,47)	RS1/16SS561J
R 1107	(B,61,53)	RS1/16SS6R8J
R 1108	(B,65,53)	RS1/16SS6R8J
R 1109	(B,58,41)	RS1/10S1R5J
R 1110	(B,63,41)	RS1/10S1R5J
R 1111	(B,70,41)	RS1/10S1R5J
R 1112	(B,65,41)	RS1/10S1R5J
R 1113	(B,61,41)	RS1/10S1R5J
R 1114	(B,59,41)	RS1/10S1R5J
R 1115	(B,66,41)	RS1/10S1R5J
R 1116	(B,68,41)	RS1/10S1R5J
R 1117	(B,64,49)	RS1/16SS104J
R 1118	(B,70,49)	RS1/16SS104J
R 1202	(A,19,12)	RS1/16SS221J
R 1203	(A,19,11)	RS1/16SS221J
R 1210	(A,30,27)	RS1/16SS101J
R 1211	(B,26,18)	RS1/16SS3R9J
R 1212	(B,27,18)	RS1/16SS3R9J
R 1214	(B,28,18)	RS1/16SS3R9J
R 1215	(B,29,18)	RS1/16SS3R9J
R 1216	(B,30,18)	RS1/16SS3R9J
R 1217	(B,31,18)	RS1/16SS3R9J
R 1219	(A,20,27)	RS1/16SS101J
R 1223	(A,19,4)	RS1/16SS753J
R 1225	(A,19,7)	RS1/16SS753J
R 1227	(B,13,21)	RS1/16SS3R9J
R 1228	(B,14,21)	RS1/16SS3R9J
R 1229	(B,15,21)	RS1/16SS3R9J
R 1230	(B,16,21)	RS1/16SS3R9J
R 1231	(B,17,21)	RS1/16SS3R9J
R 1232	(B,18,21)	RS1/16SS3R9J
R 1233	(B,19,21)	RS1/16SS3R9J
R 1234	(B,20,21)	RS1/16SS3R9J
R 1240	(B,32,18)	RS1/16SS3R9J
R 1241	(B,33,18)	RS1/16SS3R9J
R 1242	(B,34,18)	RS1/16SS3R9J
R 1243	(B,38,18)	RS1/16SS3R9J
R 1244	(B,36,18)	RS1/16SS3R9J
R 1245	(B,35,18)	RS1/16SS3R9J
R 1301	(B,14,14)	RS1/16SS391J
R 1302	(B,16,14)	RS1/16SS471J
R 1304	(B,87,23)	RS1/16SS563J
R 1305	(B,86,23)	RS1/16SS243J
R 1306	(B,85,23)	RS1/16SS683J
R 1307	(B,88,23)	RS1/16SS243J
R 1314	(B,86,21)	RAB4CQ822J
R 1351	(B,84,25)	RS1/16SS331J
R 1401	(B,72,33)	RS1/16SS221J
R 1402	(B,50,27)	RS1/16SS104J
R 1405	(B,48,10)	RS1/16SS221J

Circuit Symbol and No.		Part No.
R 1406	(B,26,4)	RS1/16SS104J
R 1407	(B,26,6)	RS1/16SS104J
R 1410	(B,47,32)	RS1/16SS104J
R 1501	(B,71,3)	RAB4CQ560J
R 1503	(A,72,3)	RS1/16SS560J
R 1505	(B,68,3)	RAB4CQ560J
R 1507	(B,65,3)	RAB4CQ560J
R 1512	(B,59,3)	RAB4CQ560J
R 1513	(A,44,4)	RS1/16SS102J
R 1515	(A,43,3)	RS1/16SS102J
R 1520	(A,35,8)	RS1/16SS221J
R 1521	(A,41,12)	RAB4CQ101J
R 1522	(B,56,3)	RAB4CQ560J
R 1523	(A,39,11)	RS1/16SS101J
R 1524	(A,39,13)	RS1/16SS101J
R 1525	(B,53,3)	RAB4CQ560J
R 1526	(A,36,11)	RS1/16SS270J
R 1528	(A,43,14)	RS1/16SS101J
R 1529	(B,54,22)	RAB4CQ560J
R 1530	(A,43,15)	RS1/16SS105J
R 1531	(B,50,22)	RAB4CQ560J
R 1532	(A,77,23)	RS1/16SS103J
R 1533	(A,76,27)	RS1/16SS103J
R 1534	(A,77,26)	RS1/16SS103J
R 1535	(A,63,36)	RS1/16SS221J
R 1537	(A,67,41)	RS1/16SS221J
R 1538	(A,66,41)	RS1/16SS221J
R 1540	(A,71,44)	RS1/16SS102J
R 1541	(A,64,41)	RS1/16SS472J
R 1542	(A,60,36)	RS1/16SS223J
R 1543	(A,59,38)	RS1/16SS332J
R 1544	(A,57,41)	RS1/16SS183J
R 1545	(A,61,36)	RS1/16SS223J
R 1546	(A,59,42)	RS1/16SS104J
R 1547	(A,59,41)	RS1/16SS473J
R 1548	(A,59,36)	RS1/16SS104J
R 1554	(A,60,40)	RS1/16SS221J
R 1555	(A,58,38)	RS1/16SS221J
R 1556	(A,43,8)	RS1/16SS104J
R 1557	(A,57,40)	RS1/16SS104J
R 1559	(A,63,41)	RS1/16SS221J
R 1560	(A,68,42)	RAB4CQ104J
R 1562	(A,64,38)	RAB4CQ104J
R 1565	(A,73,36)	RS1/16SS103J
R 1566	(A,72,36)	RS1/16SS103J
R 1567	(B,68,22)	RAB4CQ560J
R 1568	(B,65,22)	RAB4CQ560J
R 1569	(B,62,3)	RAB4CQ560J
R 1570	(B,60,22)	RAB4CQ560J
R 1571	(B,57,22)	RAB4CQ560J
R 1572	(A,47,3)	RS1/16SS103J
R 1573	(B,63,20)	RS1/16SS560J
R 1582	(A,82,26)	RS1/16SS103J
R 1583	(A,82,28)	RS1/16SS103J
R 1584	(A,77,28)	RS1/16SS103J
R 1601	(A,41,25)	RS1/16SS123J
R 1602	(A,39,24)	RS1/16SS123J
R 1607	(A,41,27)	RS1/16SS105J
R 1609	(A,37,29)	RN1/16SE1002D
R 1610	(A,43,29)	RS1/16SS222J

Circuit Symbol and No.			Part No.
R 1613	(A,39,29)		RS1/16SS223J
R 1614	(A,46,36)		RS1/16SS105J
R 1615	(A,43,33)		RS1/16SS105J
R 1616	(A,53,36)		RS1/16SS2002D
R 1672	(A,43,21)		RS1/16SS303J
R 1673	(A,38,22)		RS1/16SS183J
R 1674	(A,34,23)		RS1/16SS562J
R 1705	(A,55,57)		RS1/16SS0R0J
R 1706	(A,52,57)		RS1/16SS201J
R 1707	(A,55,51)		RS1/16SS0R0J
R 1708	(A,52,50)		RS1/16SS201J
R 1715	(A,60,56)		RS1/16SS201J
R 1716	(A,63,57)		RS1/16SS0R0J
R 1719	(A,60,50)		RS1/16SS201J
R 1720	(A,63,51)		RS1/16SS0R0J
R 1803	(A,72,56)		RS1/16SS821J
R 1804	(A,74,56)		RS1/16SS821J
R 1805	(A,72,62)		RS1/16SS104J
R 1806	(A,74,62)		RS1/16SS104J
R 1903	(A,89,52)		RS1/16SS0R0J
R 2001	(A,77,8)		RS1/16SS820J
R 2003	(A,78,12)		RS1/16SS820J
R 2004	(A,77,14)		RS1/16SS820J
R 2005	(A,77,17)		RS1/16SS220J
R 2006	(A,81,31)		RS1/16SS101J
R 2007	(A,80,7)		RAB4CQ820J
R 2009	(A,80,11)		RAB4CQ330J
R 2010	(A,80,14)		RAB4CQ330J
R 2011	(A,80,19)		RAB4CQ330J
R 2012	(A,80,22)		RAB4CQ330J
R 2014	(A,85,3)		RS1/16SS103J
R 2015	(A,77,19)		RS1/16SS103J
R 2017	(A,78,7)		RS1/16SS103J
R 2018	(A,87,4)		RS1/16SS103J
R 2019	(A,85,5)		RS1/16SS103J
R 2020	(A,89,4)		RS1/16SS103J
R 2021	(A,76,9)		RS1/16SS220J
R 2022	(A,77,9)		RS1/16SS820J
R 2023	(A,78,9)		RS1/16SS220J

CAPACITORS

Circuit Symbol and No.			Part No.
C 1001	(B,68,60)	10 µF	CCG1171
C 1002	(B,68,59)	10 µF	CCG1171
C 1003	(B,73,57)		CKSRYB103K50
C 1004	(B,72,54)		CKSSYB681K50
C 1005	(B,73,56)		CKSSYB103K16
C 1006	(B,74,52)		CCSSCH820J50
C 1007	(B,75,57)		CKSSYB104K10
C 1008	(B,80,67)	10 µF	CCG1192
C 1009	(B,82,67)	10 µF	CCG1192
C 1010	(B,85,54)		CKSSYB222K50
C 1011	(B,84,51)		CKSSYB104K10
C 1012	(B,84,58)		CKSSYB104K10
C 1014	(B,85,52)		CKSRYB105K10
C 1015	(B,81,61)	10 µF	CCG1171
C 1016	(B,86,57)		CKSRYB472K50
C 1017	(B,88,52)		CKSSYB681K50
C 1018	(B,81,60)	10 µF	CCG1171
C 1019	(B,58,59)		CCSSCH101J50
C 1020	(B,58,57)		CKSSYB104K10
C 1021	(B,60,60)		CKSRYB105K10
C 1022	(B,79,47)		CKSSYB103K16
C 1023	(B,79,49)		CKSSYB104K10
C 1024	(B,71,48)		CKSQYB475K10
C 1025	(B,64,58)		CKSRYB105K10
C 1029	(B,70,54)		CKSSYB104K10
C 1030	(B,88,51)		CKSSYB104K10
C 1031	(B,86,55)		CKSRYB474K10
C 1101	(B,61,54)	10 µF	CCG1192
C 1102	(B,59,50)	100 µF	CCG1232
C 1103	(B,65,50)	100 µF	CCG1232
C 1104	(B,63,44)		CKSSYB104K10
C 1105	(B,70,44)		CKSSYB104K10
C 1106	(B,63,46)		CKSSYB103K16
C 1107	(B,70,45)		CKSSYB103K16
C 1108	(A,35,36)		CKSSYB103K16
C 1109	(A,36,34)		CKSRYB105K10
C 1110	(A,35,37)		CKSSYB103K16
C 1111	(A,39,34)		CKSRYB105K10
C 1201	(B,21,11)		CEVW101M16
C 1202	(B,15,17)		CKSYB475K16
C 1207	(B,16,11)		CKSQYB225K10
C 1209	(A,32,17)		CKSSYB104K10
C 1210	(A,32,19)		CKSSYB471K50
C 1211	(A,19,17)		CKSSYB103K16
C 1212	(A,19,8)		CKSSYB104K10
C 1213	(A,19,10)		CKSSYB104K10
C 1301	(B,90,25)		CKSSYB104K10
C 1302	(B,88,25)		CKSSYB104K10
C 1351	(B,86,25)		CKSSYB104K10
C 1352	(B,76,19)		CKSSYB104K10
C 1353	(B,81,19)		CKSSYB104K10
C 1354	(B,74,8)		CKSSYB104K10
C 1355	(B,86,8)		CKSSYB104K10
C 1356	(B,84,28)		CKSYB106K6R3
C 1401	(B,72,31)		CKSSYB103K16
C 1402	(B,49,33)		CKSSYB104K10
C 1403	(B,81,27)		CKSQYB475K6R3
C 1405	(B,48,8)		CKSSYB103K16
C 1406	(B,26,15)		CKSSYB104K10
C 1407	(B,74,27)		CKSQYB475K6R3
C 1408	(B,47,27)		CKSSYB104K10
C 1481	(B,73,5)		CKSSYB104K10
C 1482	(B,73,8)		CKSSYB104K10
C 1483	(B,67,5)		CKSSYB104K10
C 1484	(B,63,5)		CKSSYB104K10
C 1485	(B,56,5)		CKSSYB104K10
C 1486	(B,53,5)		CKSSYB104K10
C 1487	(B,51,5)		CKSSYB104K10
C 1488	(B,49,5)		CKSSYB104K10
C 1490	(B,68,20)		CKSSYB104K10
C 1491	(B,77,27)		CKSQYB106K6R3
C 1492	(B,55,20)		CKSSYB104K10
C 1493	(B,52,20)		CKSSYB104K10
C 1494	(B,65,20)		CKSSYB104K10
C 1496	(B,65,5)		CKSSYB102K50
C 1497	(B,61,20)		CKSSYB102K50
C 1498	(B,77,26)		CKSSYB102K50
C 1499	(B,49,4)		CKSSYB102K50
C 1501	(A,68,45)		CKSQYB106K6R3

Circuit Symbol and No.		Part No.
C 1502	(A,58,44)	CKSQYB106K6R3
C 1503	(A,55,3)	CKSSYB104K10
C 1504	(A,58,3)	CKSSYB104K10
C 1505	(A,53,3)	CKSSYB104K10
C 1506	(A,60,3)	CKSSYB104K10
C 1507	(A,68,3)	CKSSYB104K10
C 1508	(A,65,3)	CKSSYB104K10
C 1509	(A,70,3)	CKSSYB104K10
C 1510	(A,43,11)	CKSSYB104K10
C 1511	(A,77,7)	CKSSYB104K10
C 1512	(A,76,11)	CKSSYB104K10
C 1513	(A,43,10)	CKSSYB104K10
C 1514	(A,76,17)	CKSSYB104K10
C 1515	(A,43,16)	CKSSYB104K10
C 1516	(A,76,15)	CKSSYB104K10
C 1517	(A,43,17)	CKSSYB104K10
C 1518	(A,37,15)	CCSSCH8R0D50
C 1519	(A,37,16)	CCSSCH8R0D50
C 1520	(A,49,3)	CCSSCH181J25
C 1521	(A,76,24)	CKSSYB104K10
C 1522	(A,77,24)	CKSSYB104K10
C 1523	(A,58,36)	CKSSYB104K10
C 1524	(A,58,37)	CKSSYB103K16
C 1525	(A,66,36)	CKSSYB104K10
C 1526	(A,62,40)	CKSSYB103K16
C 1527	(A,63,35)	CKSSYB471K50
C 1528	(A,65,36)	CKSSYB104K10
C 1529	(A,60,38)	CKSSYB103K16
C 1530	(A,59,40)	CKSSYB224K6R3
C 1531	(A,57,42)	CKSSYB123K16
C 1536	(A,76,20)	CKSSYB104K10
C 1537	(A,55,44)	CKSSYB102K50
C 1538	(A,53,44)	CKSSYB102K50
C 1539	(A,57,36)	CKSSYB104K10
C 1540	(A,61,38)	CKSSYB103K16
C 1560	(A,51,3)	CKSSYB104K10
C 1577	(A,77,31)	CKSSYB104K10
C 1601	(A,41,24)	CCSSCH101J50
C 1602	(A,43,24)	CCSSCH101J50
C 1603	(A,38,23)	CCSSCH680J50
C 1604	(A,39,25)	CCSSCH680J50
C 1608	(A,41,26)	CKSSYB103K16
C 1609	(A,43,27)	CKSSYB103K16
C 1610	(A,53,39)	CCSSCH101J50
C 1611	(A,54,38)	CKSSYB562K25
C 1612	(A,55,36)	CKSSYB224K6R3
C 1613	(A,55,38)	CKSSYB224K6R3
C 1614	(A,56,38)	CKSSYB333K16
C 1615	(A,41,30)	CKSRYB105K10
C 1616	(A,48,36)	CKSSYB104K10
C 1617	(A,49,38)	CKSSYB104K10
C 1618	(A,51,38)	CKSSYB104K10
C 1619	(A,51,36)	CKSSYB104K10
C 1620	(A,50,36)	CKSSYB104K10
C 1621	(A,50,38)	CKSSYB104K10
C 1622	(A,53,38)	CKSSYB104K10
C 1623	(A,52,39)	CKSSYB104K10
C 1624	(A,43,28)	CKSSYB103K16
C 1625	(A,56,36)	CKSSYB104K10
C 1626	(A,41,31)	CKSRYB105K10

Circuit Symbol and No.		Part No.
C 1627	(A,43,23)	CKSSYB104K10
C 1628	(A,54,36)	CKSSYB104K10
C 1629	(A,49,36)	CKSSYB104K10
C 1630	(A,38,30)	CKSQYB106K6R3
C 1671	(A,43,18)	CKSSYB104K10
C 1672	(A,43,19)	CKSSYB104K10
C 1673	(A,38,21)	CKSSYB104K10
C 1674	(A,39,22)	CKSSYB104K10
C 1675	(A,39,19)	CKSRYB105K10
C 1676	(A,38,19)	CKSRYB105K10
C 1677	(A,43,22)	CKSSYB104K10
C 1801	(A,75,52)	CKSSYB104K10
C 1802	(A,67,58) 10 µF	CCG1192
C 1803	(A,67,56)	CKSSYB104K10
C 1804	(A,70,58) 10 µF	CCG1192
C 1805	(A,70,56)	CKSSYB104K10
C 1808	(A,72,57)	CCSRCH182J50
C 1809	(A,75,57)	CCSRCH182J50
C 1810	(A,72,59)	CKSQYB475K6R3
C 1811	(A,74,59)	CKSQYB475K6R3
C 1901	(A,84,74)	CKSSYB102K50

E

Unit Number : CWX3154
Unit Name : Compound Unit(A)

Q 1299	Photo-taransistor	CPT231SCTD
S 1201	Spring Switch(12cm)	CSN1069
S 1202	Spring Switch(8cm)	CSN1069
S 1203	Spring Switch(DISC SENS)	CSN1069
S 1204	Spring Switch(DISC SENS)	CSN1070
S 1205	Spring Switch(8cm)	CSN1070
R 1298		RS1/16S0R0J
R 1299		RS1/16S0R0J

F

Unit Number : CWX3394
Unit Name : Compound Unit(B)

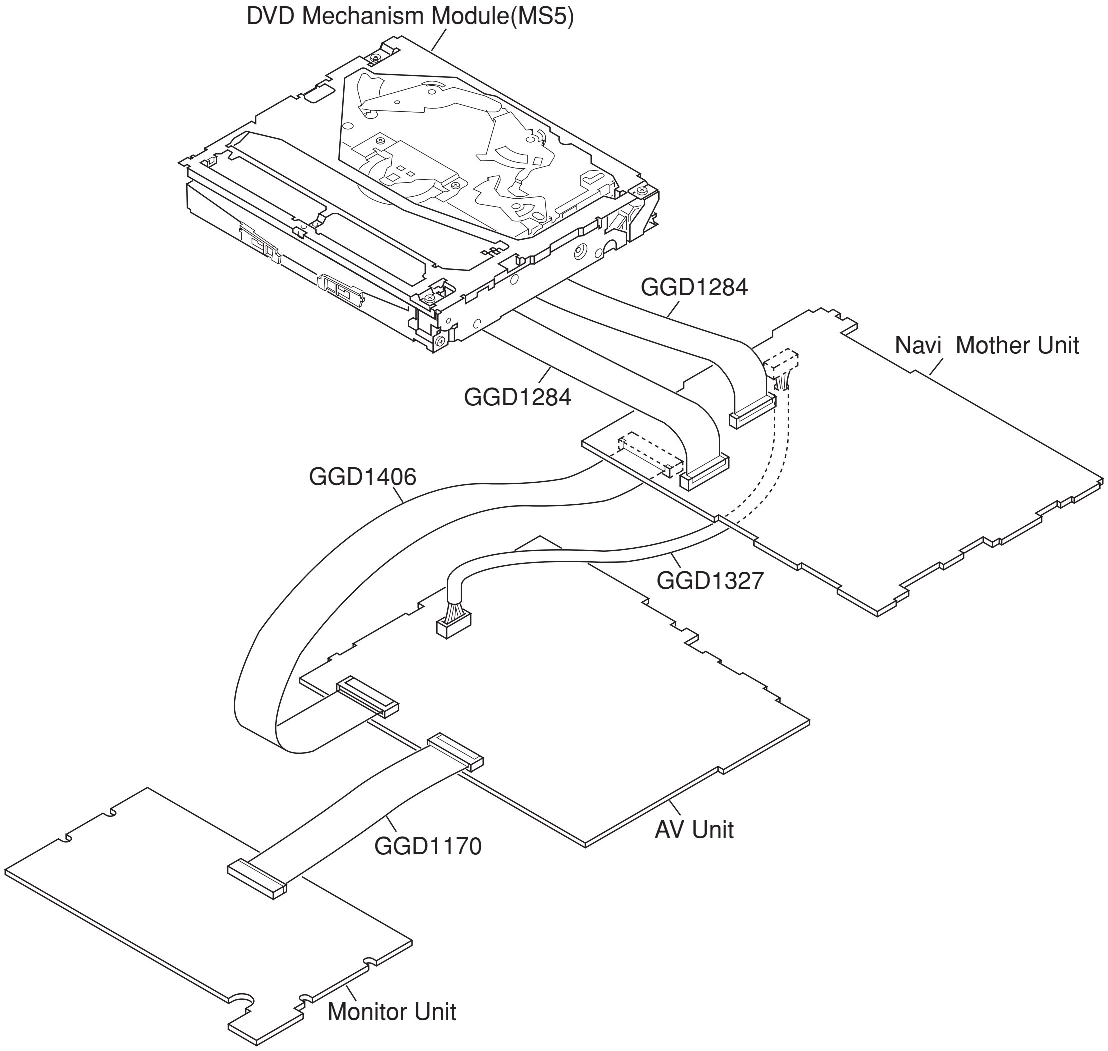
S 1206	Switch(CLAMP)	CSN1067

Miscellaneous Parts List

	Pickup Unit(Service)	CXX2118
M 1	Motor Unit(LOADING)	CXC4912
M 2	Motor(STEPPING)	CXM1364
M 3	Motor(SPINDLE)	CXM1362

6. ADJUSTMENT

6.1 JIG CONNECTION DIAGRAM



● Jigs List

Name	Jig No.	Remarks
40P FFC BBR	GGD1284	DVD Core Unit (CN2001) <---> Navi Mother Unit (CN2)
40P FFC BBR	GGD1284	DVD Core Unit (CN1901) <---> Navi Mother Unit (CN2057)
20P Extension Cable	GGD1327	Navi Mother Unit (CN2068) <---> AV Unit (CN1652)
80P FPC	GGD1406	Navi Mother Unit (CN2055) <---> AV Unit (CN1711)
40P FFC BB	GGD1170	Monitor Unit (CN5001) <---> AV Unit (CN1661)
TEST DISC	GGV1303	Operation check
Remote Control Uint	CXC6317	Operation for adjustment
TORX driver (T2)	GGK1095	SKEW adjustment (DVD)
Bond	GEM1033	SKEW adjustment (DVD)
Bond (Produced by THREE BOND)	1401M	SKEW adjustment (DVD)
TEST DISC	GGV1018	SKEW adjustment (DVD)

6.2 DVD ADJUSTMENT

1) Precautions

This product uses 5 V and 3.3 V as standard voltages. The electrical potential that is the reference for signals, is not GND, but VREF (approximately 2.2 V) and VHALF (approximately 1.65 V).

During product adjustments, if the reference voltage is mistakenly taken as GND, and a grounding contact is made, not only would it be impossible to measure the accurate electrical potential, but also the servo motor would malfunction, resulting in the application of a strong impact on the pick up. The following precautionary measures should be strictly adhered to, in order to avoid such problems.

The reference voltage and GND should not be confused when using the minus probe of a measurement device. When an oscilloscope is being used special care should be taken to make sure that the reference voltage is not connected to the probe of ch1 (on the minus side), while the probe of ch2 (on the minus side), is connected to GND. Further, since the body frame of most measurement devices have the same electrical potential as the minus side of the probe, the body frame of the measurement device should be set to floating ground.

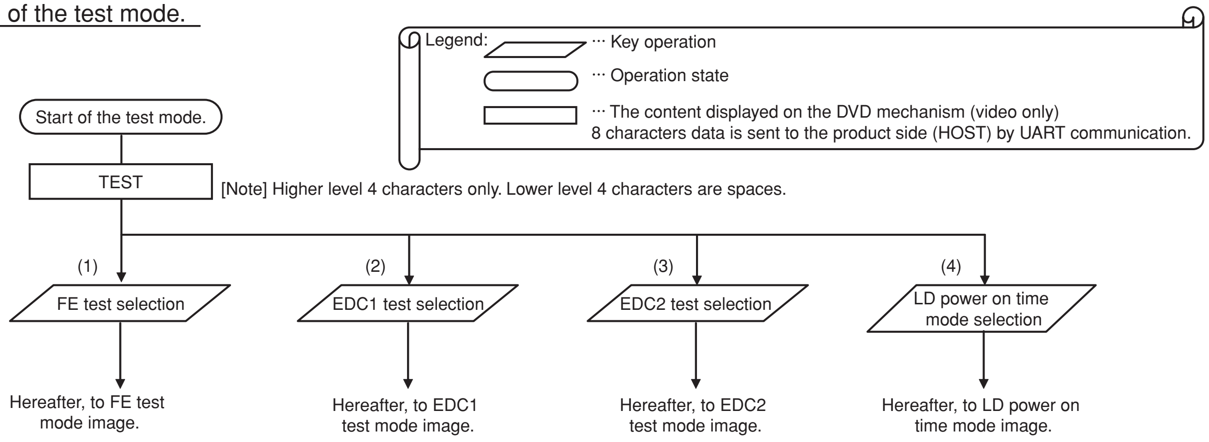
If the reference voltage is connected to GND by mistake, turn the regulator OFF immediately, or turn the power OFF.

- Remove the filters and wires used for measurements only after the regulator has been turned OFF.
- For stable circuit operation, keep the mechanism operating for about one minute or more after the regulator is turned on.
- Whenever the product is in the test mode, the software will not take any protective action. For this reason, special care should be taken to make sure that no mechanical or electrical shock could be applied to the product when taking measurements in the test mode.
- Whenever the EJECT key is pressed to eject the disk, no other keys, other than the EJECT key, should be pressed until the disk eject action has been completed.
- If the product hangs up turn the power OFF immediately.
- Laser didoes may be damaged, if the volume switch for the laser power adjustment of the pick up unit, is turned.

Attention)

- Test mode starting procedure
  Please select "MS5 check" to start test mode.
- Test mode stopping procedure
  ACC and Backup OFF.

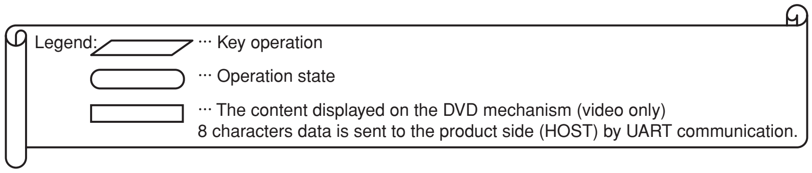
Image of the test mode.

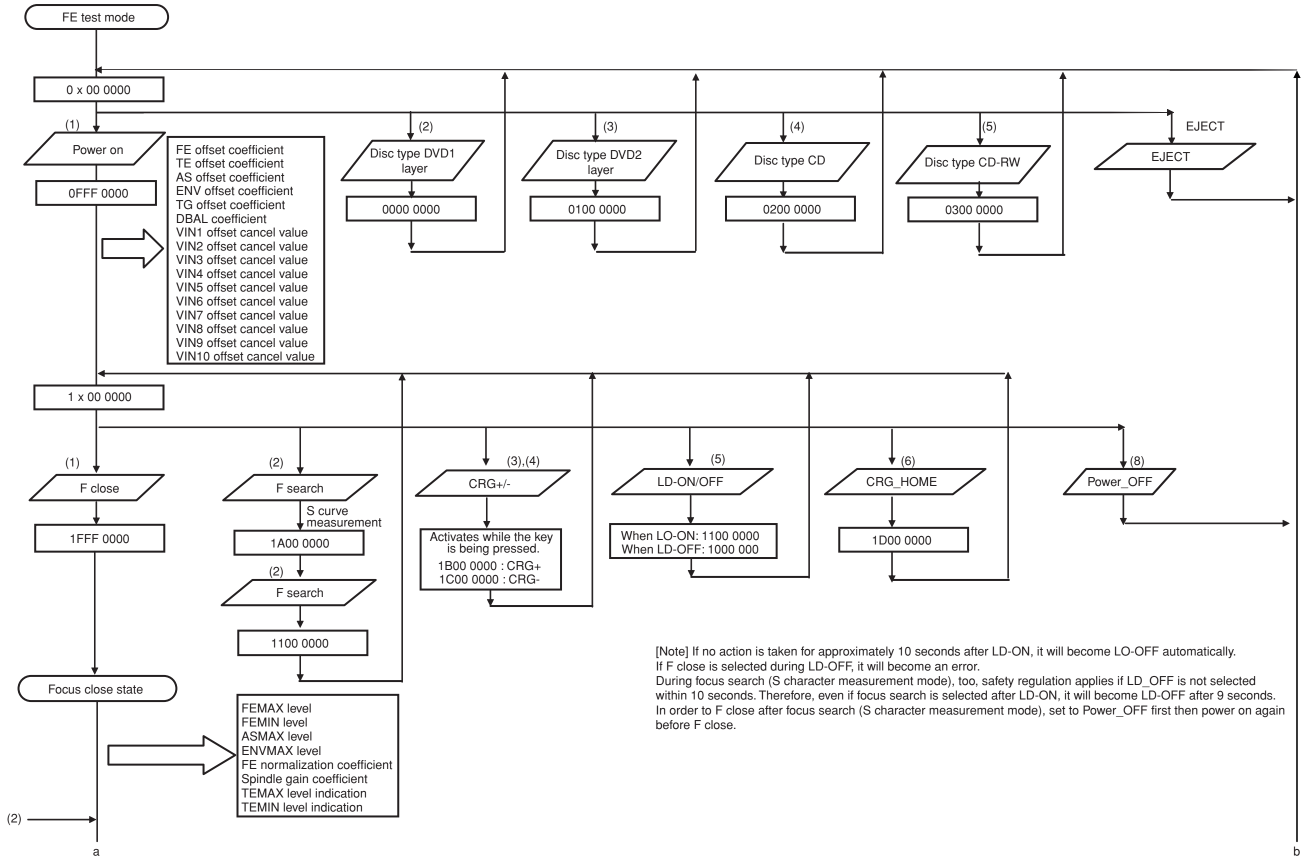

Legend:
··· Key operation
··· Operation state
··· The content displayed on the DVD mechanism (video only)
8 characters data is sent to the product side (HOST) by UART communication.
Start of the test mode.
TEST
(1)
FE test selection
Hereafter, to FE test mode image.
(2)
EDC1 test selection
Hereafter, to EDC1 test mode image.
(3)
EDC2 test selection
Hereafter, to EDC2 test mode image.
(4)
LD power on time mode selection
Hereafter, to LD power on time mode image.

[Note] Higher level 4 characters only. Lower level 4 characters are spaces.

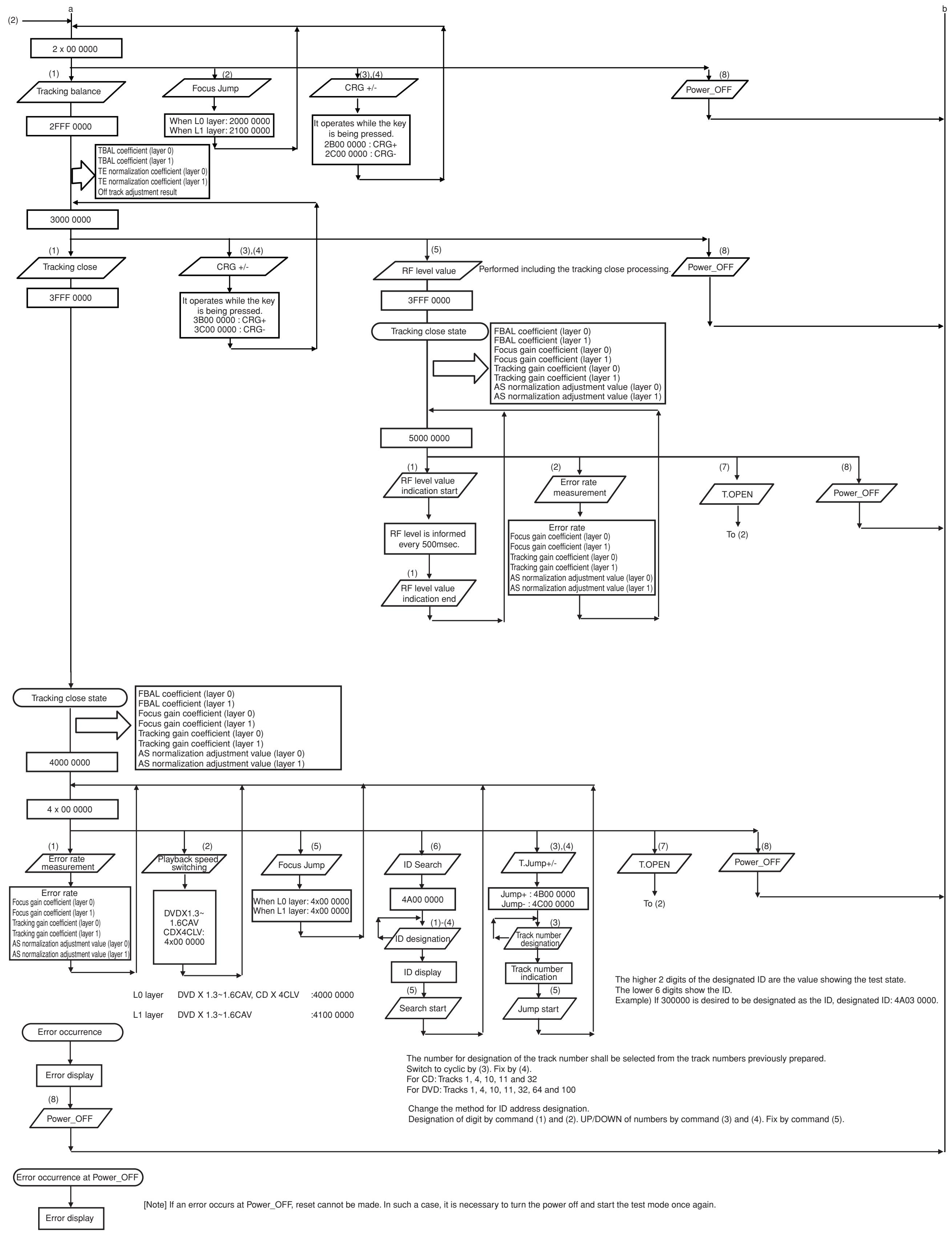
[Note] In order to move on to another test after selecting a test (FE/EDC1/EDC2), it is necessary to restart the DVD mechanism in the test mode.

Image of the front end test mode.


Legend:
··· Key operation
··· Operation state
··· The content displayed on the DVD mechanism (video only)
8 characters data is sent to the product side (HOST) by UART communication.



[Note] If no action is taken for approximately 10 seconds after LD-ON, it will become LO-OFF automatically.
If F close is selected during LD-OFF, it will become an error.
During focus search (S character measurement mode), too, safety regulation applies if LD_OFF is not selected within 10 seconds. Therefore, even if focus search is selected after LD-ON, it will become LD-OFF after 9 seconds.
In order to F close after focus search (S character measurement mode), set to Power_OFF first then power on again before F close.


a
b
(2)
2 x 00 0000
(1)
Tracking balance
2FFF 0000
TBAL coefficient (layer 0)
TBAL coefficient (layer 1)
TE normalization coefficient (layer 0)
TE normalization coefficient (layer 1)
Off track adjustment result
(2)
Focus Jump
When L0 layer: 2000 0000
When L1 layer: 2100 0000
(3),(4)
CRG +/-
It operates while the key is being pressed.
2B00 0000 : CRG+
2C00 0000 : CRG-
(8)
Power_OFF
3000 0000
(1)
Tracking close
3FFF 0000
(3),(4)
CRG +/-
It operates while the key is being pressed.
3B00 0000 : CRG+
3C00 0000 : CRG-
(5)
RF level value
Performed including the tracking close processing.
(8)
Power_OFF
3FFF 0000
Tracking close state
FBAL coefficient (layer 0)
FBAL coefficient (layer 1)
Focus gain coefficient (layer 0)
Focus gain coefficient (layer 1)
Tracking gain coefficient (layer 0)
Tracking gain coefficient (layer 1)
AS normalization adjustment value (layer 0)
AS normalization adjustment value (layer 1)
5000 0000
(1)
RF level value indication start
RF level is informed every 500msec.
(1)
RF level value indication end
(2)
Error rate measurement
Error rate
Focus gain coefficient (layer 0)
Focus gain coefficient (layer 1)
Tracking gain coefficient (layer 0)
Tracking gain coefficient (layer 1)
AS normalization adjustment value (layer 0)
AS normalization adjustment value (layer 1)
(7)
T.OPEN
To (2)
(8)
Power_OFF
Tracking close state
FBAL coefficient (layer 0)
FBAL coefficient (layer 1)
Focus gain coefficient (layer 0)
Focus gain coefficient (layer 1)
Tracking gain coefficient (layer 0)
Tracking gain coefficient (layer 1)
AS normalization adjustment value (layer 0)
AS normalization adjustment value (layer 1)
4000 0000
4 x 00 0000
(1)
Error rate measurement
Error rate
Focus gain coefficient (layer 0)
Focus gain coefficient (layer 1)
Tracking gain coefficient (layer 0)
Tracking gain coefficient (layer 1)
AS normalization adjustment value (layer 0)
AS normalization adjustment value (layer 1)
(2)
Playback speed switching
DVDX1.3~1.6CAV
CDX4CLV:
4x00 0000
(5)
Focus Jump
When L0 layer: 4x00 0000
When L1 layer: 4x00 0000
(6)
ID Search
4A00 0000
(1)-(4)
ID designation
ID display
(5)
Search start
(3),(4)
T.Jump+/-
Jump+ : 4B00 0000
Jump- : 4C00 0000
(3)
Track number designation
Track number indication
(5)
Jump start
(7)
T.OPEN
To (2)
(8)
Power_OFF
Error occurrence
Error display
(8)
Power_OFF
Error occurrence at Power_OFF
Error display

L0 layer DVD X 1.3~1.6CAV, CD X 4CLV :4000 0000

L1 layer DVD X 1.3~1.6CAV :4100 0000

The higher 2 digits of the designated ID are the value showing the test state.
The lower 6 digits show the ID.
Example) If 300000 is desired to be designated as the ID, designated ID: 4A03 0000.

The number for designation of the track number shall be selected from the track numbers previously prepared.
Switch to cyclic by (3). Fix by (4).
For CD: Tracks 1, 4, 10, 11 and 32
For DVD: Tracks 1, 4, 10, 11, 32, 64 and 100

Change the method for ID address designation.
Designation of digit by command (1) and (2). UP/DOWN of numbers by command (3) and (4). Fix by command (5).

[Note] If an error occurs at Power_OFF, reset cannot be made. In such a case, it is necessary to turn the power off and start the test mode once again.

EDC. Image of the test mode

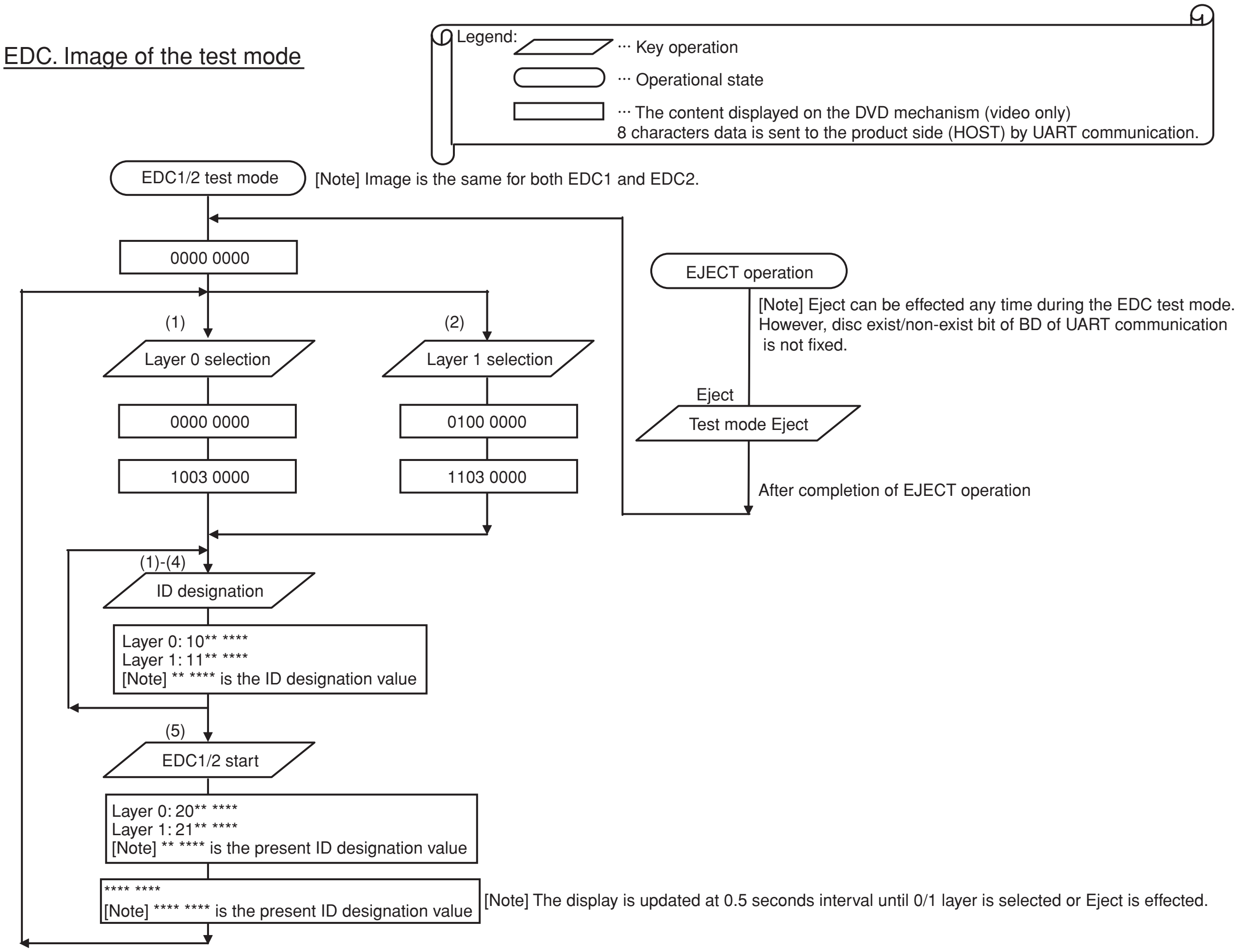
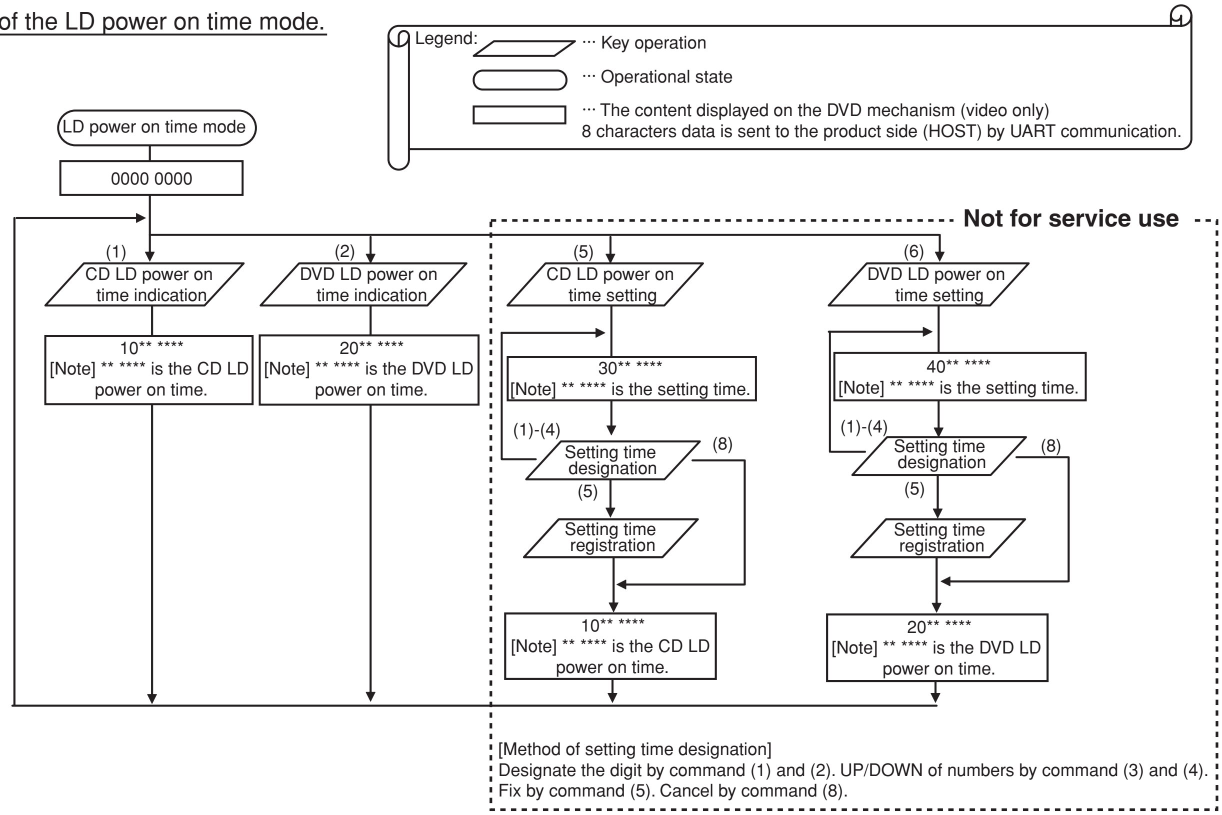

Legend:
··· Key operation
··· Operational state
··· The content displayed on the DVD mechanism (video only)
8 characters data is sent to the product side (HOST) by UART communication.
EDC1/2 test mode
[Note] Image is the same for both EDC1 and EDC2.
0000 0000
(1)
Layer 0 selection
0000 0000
1003 0000
(2)
Layer 1 selection
0100 0000
1103 0000
EJECT operation
[Note] Eject can be effected any time during the EDC test mode. However, disc exist/non-exist bit of BD of UART communication is not fixed.
Eject
Test mode Eject
After completion of EJECT operation
(1)-(4)
ID designation
Layer 0: 10** ****
Layer 1: 11** ****
[Note] ** **** is the ID designation value
(5)
EDC1/2 start
Layer 0: 20** ****
Layer 1: 21** ****
[Note] ** **** is the present ID designation value
**** ****
[Note] **** **** is the present ID designation value
[Note] The display is updated at 0.5 seconds interval until 0/1 layer is selected or Eject is effected.

Image of the LD power on time mode.


Legend:
··· Key operation
··· Operational state
··· The content displayed on the DVD mechanism (video only)
8 characters data is sent to the product side (HOST) by UART communication.
LD power on time mode
0000 0000
Not for service use
(1)
CD LD power on time indication
10** ****
[Note] ** **** is the CD LD power on time.
(2)
DVD LD power on time indication
20** ****
[Note] ** **** is the DVD LD power on time.
(5)
CD LD power on time setting
30** ****
[Note] ** **** is the setting time.
(1)-(4)
Setting time designation
(8)
(5)
Setting time registration
10** ****
[Note] ** **** is the CD LD power on time.
(6)
DVD LD power on time setting
40** ****
[Note] ** **** is the setting time.
(1)-(4)
Setting time designation
(8)
(5)
Setting time registration
20** ****
[Note] ** **** is the DVD LD power on time.
[Method of setting time designation]
Designate the digit by command (1) and (2). UP/DOWN of numbers by command (3) and (4).
Fix by command (5). Cancel by command (8).

[Note] If the power on time is 999999 hours or more, it is always reported as 999999 hours.
[Note] If the power on time is " *E** **** ", the value may not be correct due to the life of the flash memory.

Error status	OSD *1	UART *2	Meaning	Method of reset			
				ACC Off/On	Source Off/On	Eject	Play Key
Media Error	It is a disc unable to be played back. NON-PLAYABLE DISC	00h	A disc containing the unplayable Format only.	X	X	X	-
Open	(No display)	10h	Door open error	*	*	*	*
Read Error	ERROR-02-99	20h	Transfer start error	X	X	X	X
Focus Error(Focus Error in mechanism set up)	ERROR-02-90	21h	Focus error	X	X	X	X
Surface Error	ERROR-02-9E	22h	Focus error during set up (A focus has never been achieved with that disc.)	X	X	X	X
Address not found (Invalid Track)	ERROR-02-80	23h	Address not found.	X	X	X	X
Spindle Lock	ERROR-02-91	24h	Spindle lock NG (the disc cannot rotate)	X	X	X	X
Carriage HOME	ERROR-02-92	25h	Carriage home NG (The pick up tries to return to carriage home, but it cannot go back and stopped.)	X	X	X	X
ID/SUBCODE Read Error	ERROR-02-94	26h	ID/SUBCODE Read Error (ID/SUBCODE cannot be read due to scratch or stain.)	X	X	X	X
AV CHIP decode Error	ERROR-02-9A	2Ah	AV CHIP decode NG (AV chip cannot be decoded.)	X	X	X	X
AV CHIP Recovery NG	ERROR-02-9B	2Bh	AV CHIP recovery NG	X	X	X	X
Error of PLAY BACK Mode Status	ERROR-02-9C	2Ch	Playback state error (An error due to software bug.)	X	X	X	X
Disc Data Error	ERROR-02-9D	2Dh	Disc Data NG	X	X	X	X
Temp Error (In Case of High Temperature)	Temperature protection circuit is being activated. THERMAL PROTECTION IN MOTION	30h	High temperature (Playback is stopped because the pick up temperature is 89 °C or higher.)	X	-	-	-
No Disc (including Disc loading and ejecting)	(No display)	40h	Disc has not been inserted. (Including Load in process or Eject in process.)	*	*	*	*
Loading_Mecha Error	(No display)	50h	Loading mechanism error (The disc cannot be clamped.)	X	-	X	-
DRM Error	It is a protected disc. PROTECTED DISC	70h	DRM error (All music cannot be played back due to DRM.)	-	-	X	-
Region code Error NG	Region code is incorrect. DIFFERENT REGION DISC	90h	Region code NG (Unable to be played back due to incorrect mechanism region.)	-	-	X	-
CPPM*3 Key Error *4	It is a disc unable to be played back. NON-PLAYABLE DISC	91h	Key Error for playback	-	-	X	-
CPRM Key Error *7	NON-PLAYABLE DISC	93h	Key Error for playback	-	-	X	-
AWM*5 Error *4	(No display)	*6	Playback the illegally copied disc by DVD-A (Mute the sound on the mechanism side.)	X	X	X	-
REQUEST error	ERROR-02-A0	A0h	REQUEST error	X	X	X	X
Failure in issuing read command (chip dependent)	ERROR-02-A1	A1h	Failure in issuing the read command	X	X	X	X
Adjustment of L0 is NG.	ERROR-02-A2	A2h	L0 adjustment is NG.	X	X	X	X
Adjustment of L1 is NG.	ERROR-02-A3	A3h	L1 adjustment is NG	X	X	X	X
LD system NG	ERROR-02-A4	A4h	LD system NG	X	X	X	X
Gain adjustment system NG.	ERROR-02-A5	A5h	Gain adjustment system NG.	X	X	X	X
Gain determining system NG.	ERROR-02-A6	A6h	Gain determining system NG.	X	X	X	X
Servo initial setting related items NG.	ERROR-02-A7	A7h	Servo initial setting related items NG.	X	X	X	X
Disc is not clamped yet.	ERROR-02-A8	A8h	Disc is not clamped yet.	X	X	X	X
Tracking system NG.	ERROR-02-A9	A9h	Tracking system NG	X	X	X	X
Media setting system NG.	ERROR-02-AA	AAh	Media setting system NG	X	X	X	X
Focus Error	ERROR-02-AB	ABh	JUMP over layers NG	X	X	X	X
Error of PLAY BACK Mode Status	ERROR-02-B0	B0h	Navigation command error	X	X	X	X
Error of PLAY BACK Mode Status	ERROR-02-B1	B1h	Retry over	X	X	X	X
Undefined Error	ERROR-FF-FF	FFh	Undefined error	X	X	X	X

X: Cancel the error by operation. -: Error is not cancelled by operation. *: No setting

*1 A content displayed on OSD. As for the items having multiple display patterns, the upper row is for the Japanese version Full GUI, and the lower row is for the Touch Panel model and Full GUI (English version).

*2 A parameter of UART command, such as "receipt error notice", that the DVD mechanism transmits.

*3 CPPM(Content Protection for Prerecorded Media) : A copyright protection technique used in DVD-A. The protection is realized by using the keys recorded on the media and the device key held by the player.

*4 DVD-A compatible model only.
When an error has occurred, only the audio output will be muted but playback operation will continue. Furthermore, acceptance of the user operation will be the same as usual.

*5 AWM (Audio WaterMark): Electronic watermark. Information on the copyright owner or CCI (copy control information) are recorded so that illegally copied discs can be identified.

*6 Notice as an error status will not be given

*7 CPRM(Content Protection for Recordable Media) : A copyright protection technique for digital contents used for re-writable DVD or memory card. (DVD-VR model only)

● SKEW adjustment

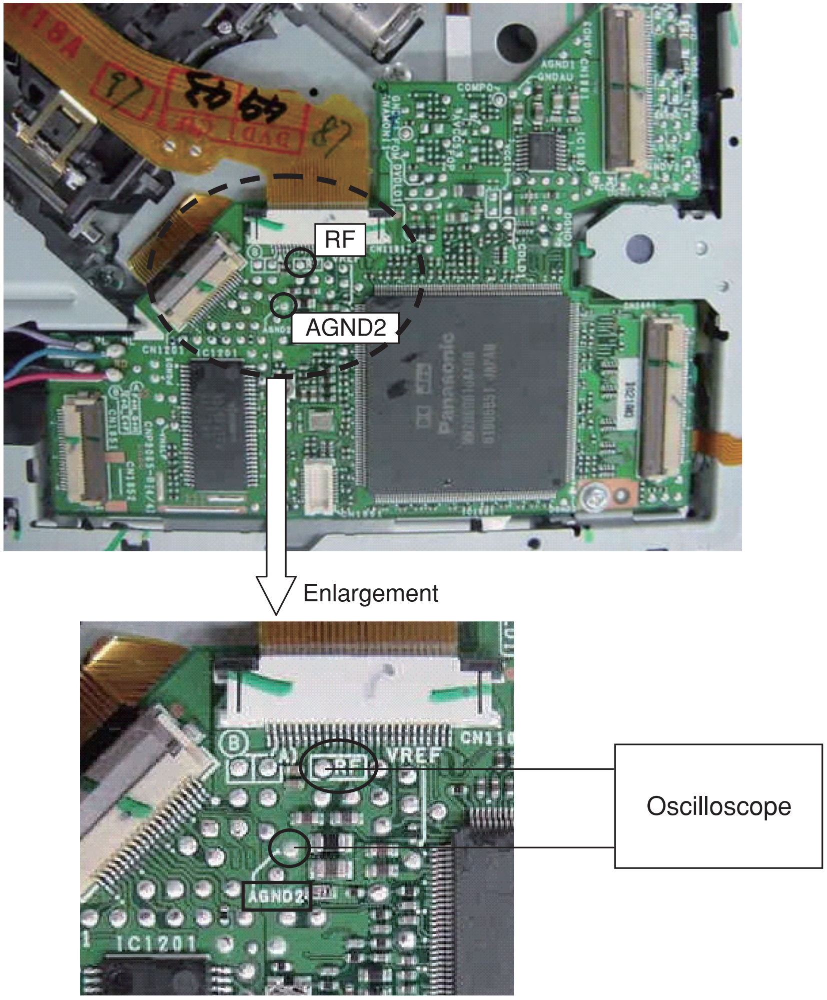
When one of the following replacements has taken place, SKEW adjustment for the pick up will be required.
(1) Replacement of the pick up unit
(2) Replacement of the spindle motor
(3) Replacement of the carriage chassis
(4) Replacement of the main shaft of the pick up unit
(5) Replacement of the sub shaft of the pick up unit

- Measurement equipment and tools/jigs: Oscilloscope
  Driver for SKEW adjustment → TORX driver (T2) (GGK1095)
  Bond for fixing the SKEW (GEM1033)
  Bond for locking the screw (Locking agents (1401M : produced by THREE BOND))

- Disc used: GGV1018

- Measurement reference: AGND2
- Measurement point: RF

- Connection drawing
  DVD core unit



Symptom in case the adjustment is not adequate: Worsening of the error rate 10-3
(Normally 10-4 or less.)
Large RF jitter
RF waveform distortion
Tracking drawing/Unstable servo

* Caution: Do not look into the laser light during adjustment.

There are two methods for adjustment, a method whereby the adjustment is made while monitoring the RF waveform using the oscilloscope (method ①) and a method whereby the adjustment is made while checking the RF level in value by OSD (method ②).

The adjustment procedure is shown below. Refer to the paragraph for the service test mode regarding entering of the test mode and the operation procedure.

Adjustment procedure:

1. Turn the DVD mechanism module upside down so that the pick up can be adjusted.
   When the module is turned upside down, there is a possibility that the disc is rubbed.
   So, first place a coin with the thickness of approximately 1.5mm on a desk, and set the module upside down in a way that section ① in the illustration below comes right above the coin.

2. Install the pick up. (Refer to the section regarding removal of the pick up from the mechanism unit.)
   As for the precautions in handling the pick up, refer to the precautions in handling the PU as described below.

3. Method ①:
   Connect the oscilloscope by referring to the connection drawing so that the RF signal can be monitored with AGND2 as the reference.
   Method ②:
   There is no need for setting of any equipment. Proceed to step 4.

4. Turn the power ON, and load the disc for adjustment.(GGV1018)

5. After setting the disc type to DVD layer 1 in the front end test mode, turn the power ON, and move the pick up to the inner periphery. (CRG - Home)

6. Turn the LD ON.

7. Set to focus close, and make auto adjustment for all items under that state, then set to tracking close.
   And make auto adjustment for all items under that state as well.

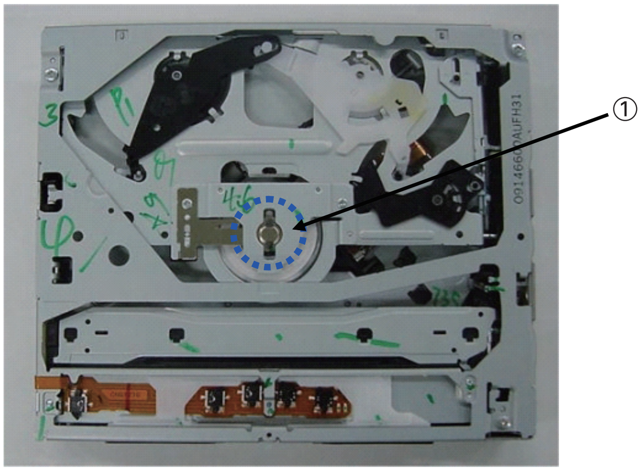
8. Make an intermediate periphery (ID: 100 000) search, and move the PU to intermediate periphery.

9. Method ①:
   Proceed to step 10.
   Method ②:
   After setting to Tracking Open, make all auto adjustments, and set to Tracking Close this time with a command that can be RF displayed. Make auto adjustment for all items under that state as well.

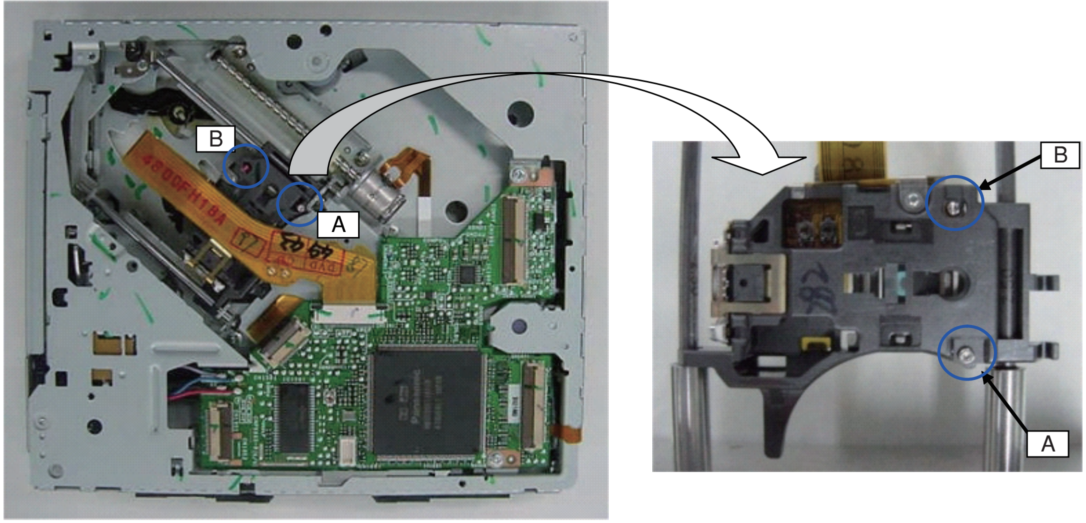
10. Use TORX driver (T2) (GGK1095) for the following.
    Method ①:
    While monitoring the RF waveform on the oscilloscope, turn SKEW adjustment screw A just a little bit in a way that the level will reach the maximum.
    While the pick up is at the intermediate periphery, turn SKEW adjustment screw B just a little bit in a way that the level will reach the maximum.
    While the pick up is at the intermediate periphery, turn SKEW adjustment screw A just a little bit in a way that the level will reach the maximum.
    (Make adjustment in the order of A -> B -> A, Please end the each adjustment by turning screw clockwise.)
    Method ②:
    While monitoring the RF level value on the OSD display, turn the SKEW adjustment screw A just a little bit in a way that the level will reach the maximum.
    While the pick up is at the intermediate periphery, turn SKEW adjustment screw B just a little bit in a way that the level will reach the maximum.
    While the pick up is at the intermediate periphery, turn SKEW adjustment screw A just a little bit in a way that the level will reach the maximum.
    (Make adjustment in the order of A -> B -> A, Please end the each adjustment by turning screw clockwise.)
    If the error rate is not good, please perform Method ① again.

11. Turn the power OFF in the test mode, and after confirming that the disc has stopped, eject the disc.

12. Apply adhesive for fixing the SKEW and lock the screw.
    Refer to the illustration below for the adhesion points.



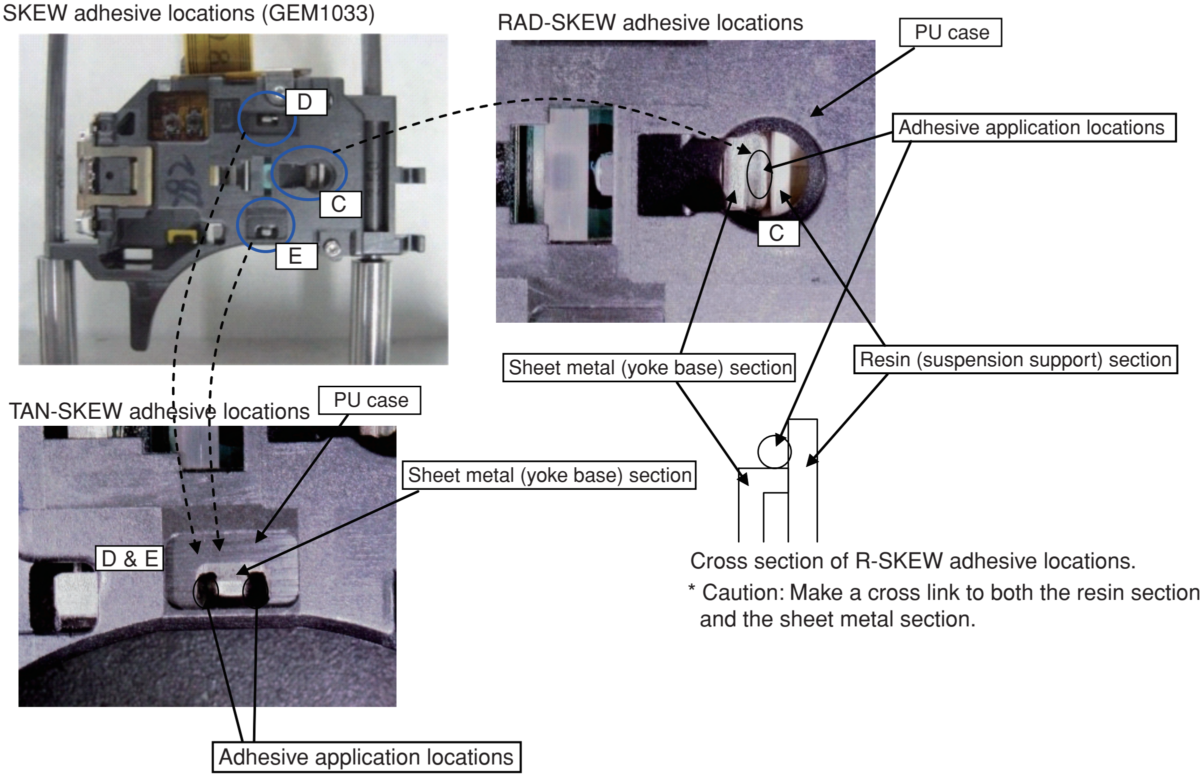
SKEW adjustment locations.



SKEW adhesive locations (GEM1033)

RAD-SKEW adhesive locations

TAN-SKEW adhesive locations

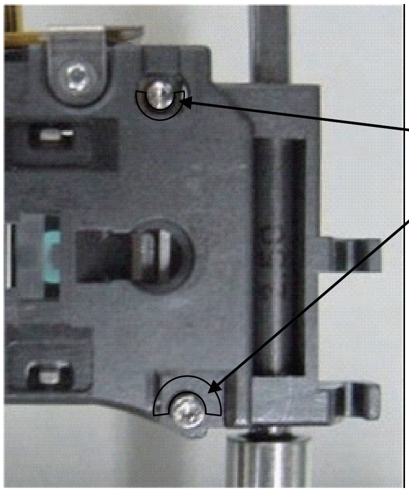

D
C
E
PU case
Adhesive application locations
C
Sheet metal (yoke base) section
Resin (suspension support) section
PU case
Sheet metal (yoke base) section
D & E
Adhesive application locations

Cross section of R-SKEW adhesive locations.

* Caution: Make a cross link to both the resin section and the sheet metal section.

* Caution: Make a cross link to both the case section and the sheet metal section.

Screw locking adhesive location (1401M : produced by THREE BOND)

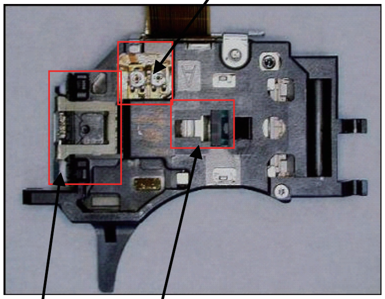


Screw locking adhesive location
Apply the locking agent for more than half of the screw head circumference.
* Caution: The locking agent shall not overflow to outside of the PU case.

Precautions in handling the PU.

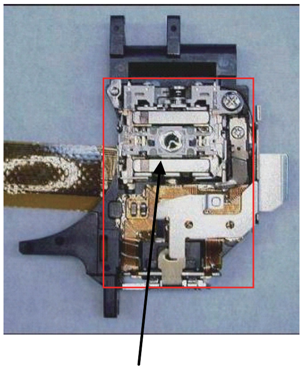
* Caution: Do not touch the shaded section in the drawing below.

RF level adjustment section



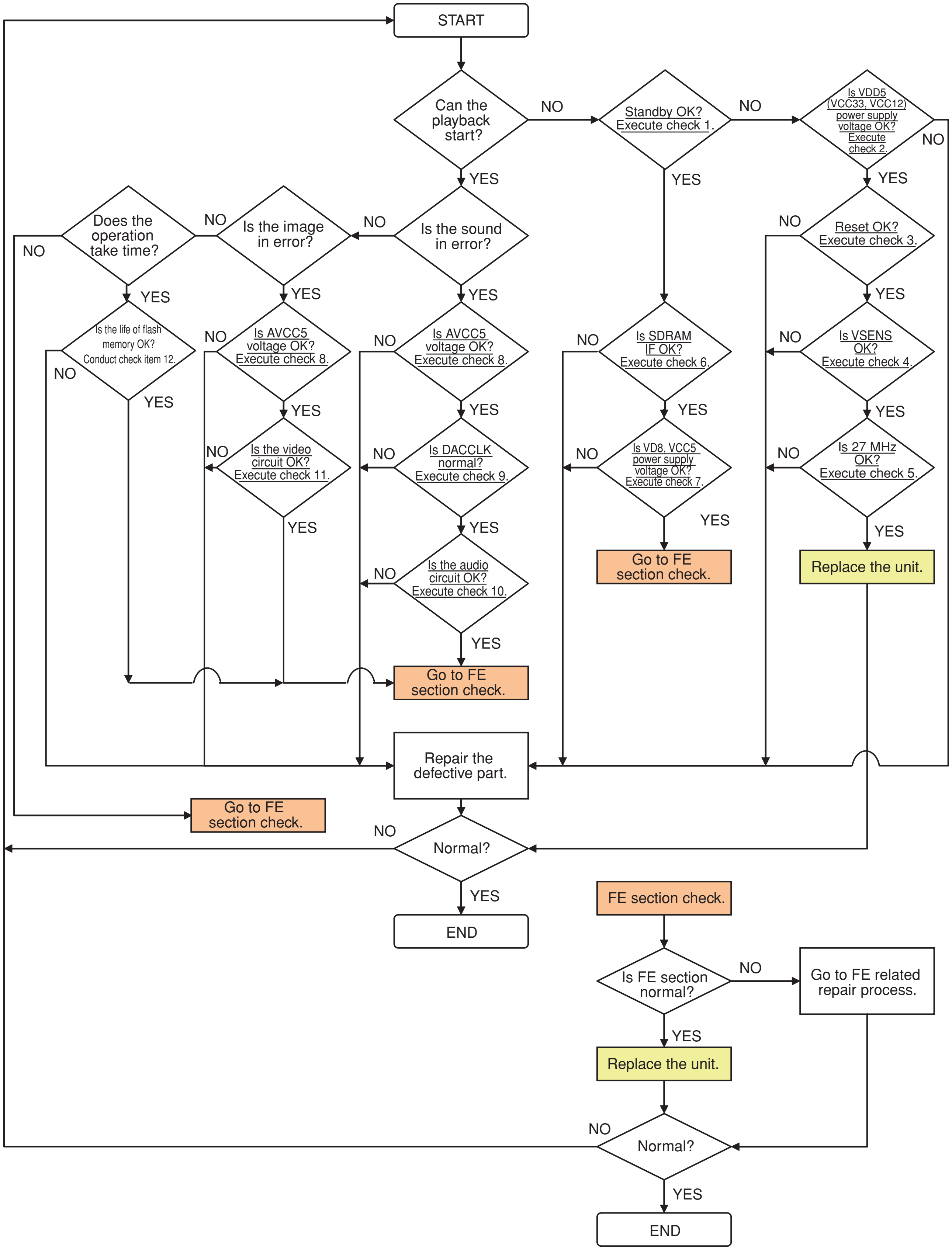
Do not touch the optical parts.

Hologram (be careful for the static electricity)
GRT adjustment section



Do not touch the springs.

BACK END section flow


START
Can the playback start?
NO
Standby OK? Execute check 1.
NO
Is VDD5 (VCC33, VCC12) power supply voltage OK? Execute check 2.
NO
YES
YES
YES
Does the operation take time?
NO
Is the image in error?
NO
Is the sound in error?
NO
Reset OK? Execute check 3.
NO
YES
YES
YES
YES
Is the life of flash memory OK? Conduct check item 12.
NO
Is AVCC5 voltage OK? Execute check 8.
NO
Is AVCC5 voltage OK? Execute check 8.
NO
Is SDRAM IF OK? Execute check 6.
NO
Is VSENS OK? Execute check 4.
NO
YES
YES
YES
YES
YES
Is the video circuit OK? Execute check 11.
NO
Is DACCLK normal? Execute check 9.
NO
Is VD8, VCC5 power supply voltage OK? Execute check 7.
NO
Is 27 MHz OK? Execute check 5.
NO
YES
YES
YES
YES
Go to FE section check.
Replace the unit.
Is the audio circuit OK? Execute check 10.
NO
YES
Go to FE section check.
Repair the defective part.
Go to FE section check.
NO
Normal?
YES
END
FE section check.
Is FE section normal?
NO
Go to FE related repair process.
YES
Replace the unit.
NO
Normal?
YES
END

Check 1: Standby OK?

<Check> Check the voltage at the "STANBY" test point while the power is on.
Use the "DGND1" test point at the reference.

NO.	Check point	Module No.	Specification value	Unit
1	STANBY-DGND1	ALL	VCC33 V- 0.6 V or more	V

Side A

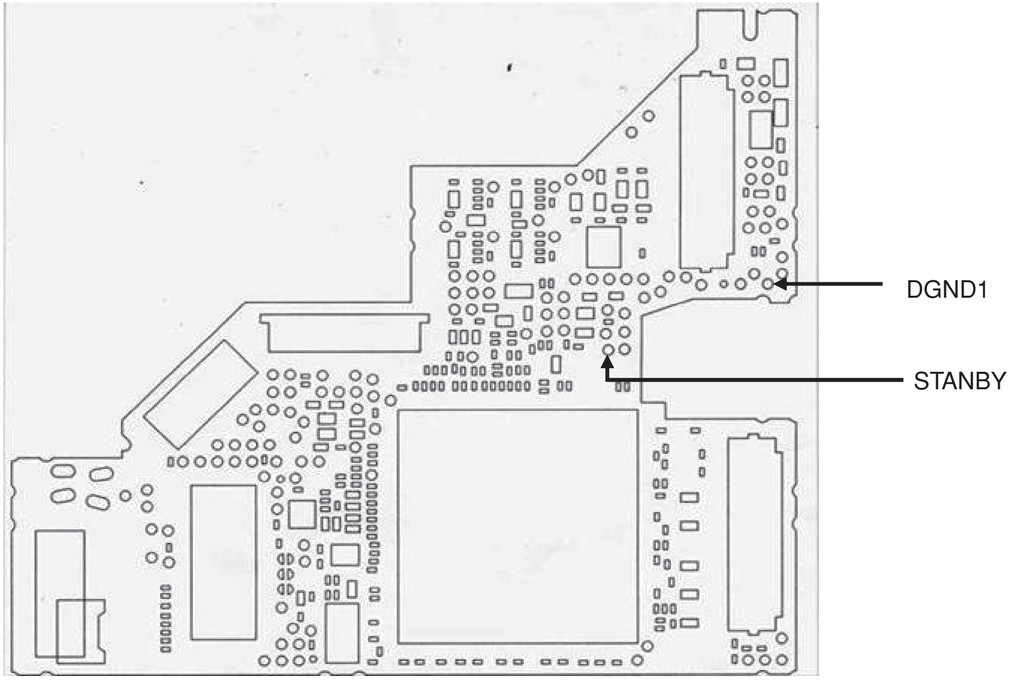


Fig 1.1: STANBY check point

Check 2: Is VDD5 (VCC33, VCC12) power supply voltage OK?

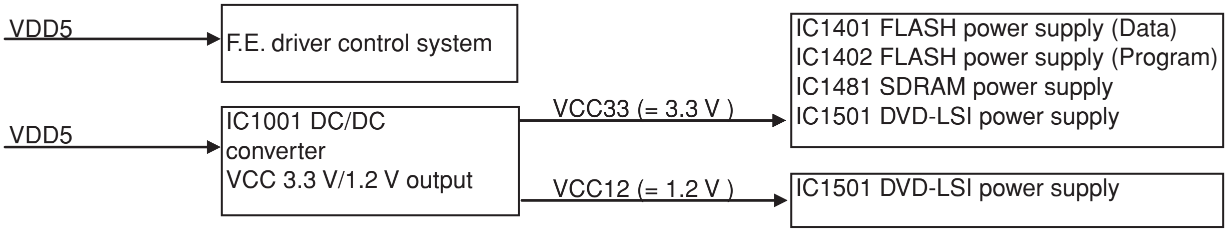

VDD5
F.E. driver control system
VDD5
IC1001 DC/DC converter
VCC 3.3 V/1.2 V output
VCC33 (= 3.3 V)
VCC12 (= 1.2 V)
IC1401 FLASH power supply (Data)
IC1402 FLASH power supply (Program)
IC1481 SDRAM power supply
IC1501 DVD-LSI power supply
IC1501 DVD-LSI power supply

Fig 2.1: Power supply configuration

<Check> Check the voltage at the "VDD5_3, VCC33_3 and VCC12_1" test point while the power is on.
Use the "DGND1" test point at the reference.

NO.	Check point	Module No.	Specification value	Unit
1	VDD5_3 - DGND1	ALL	5.0 ± 0.4	V
2	VCC33_3 - DGND1	ALL	3.3 ± 0.15	V
3	VCC12_1 - DGND1	ALL	1.2 ± 0.12	V

Side A

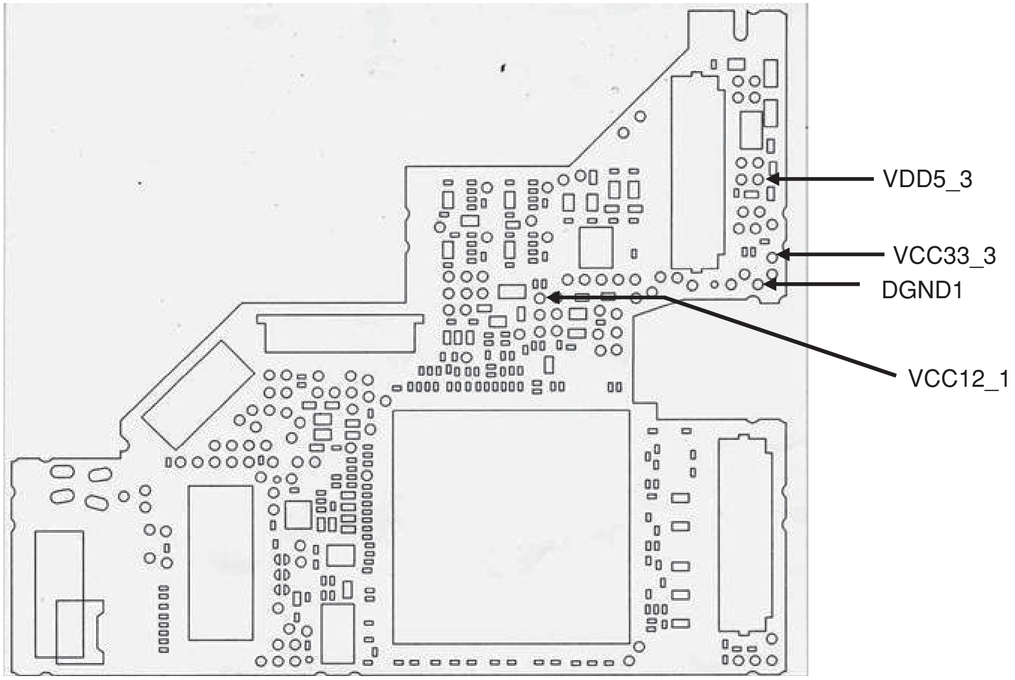


Fig 2.2: VDD5, VCC33, VCC12 voltage check points

Check 3: Reset OK?

<Check> Check the voltage at the "XRES" test point while the power is on.
Use the "DGND1" test point at the reference.

NO.	Check point	Module No.	Specification value	Unit
1	XRES-DGND1	ALL	VCC33 x 0.7 or more	V

Side A

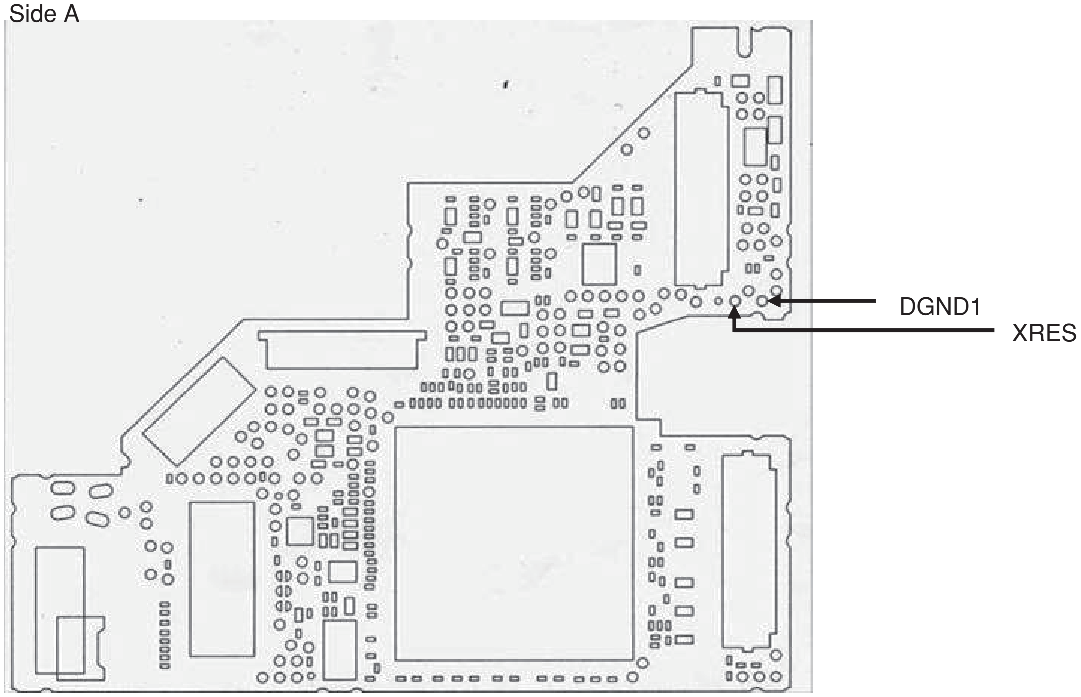


Fig 3.1: RESET check point

Check 4: Is VSENS OK?

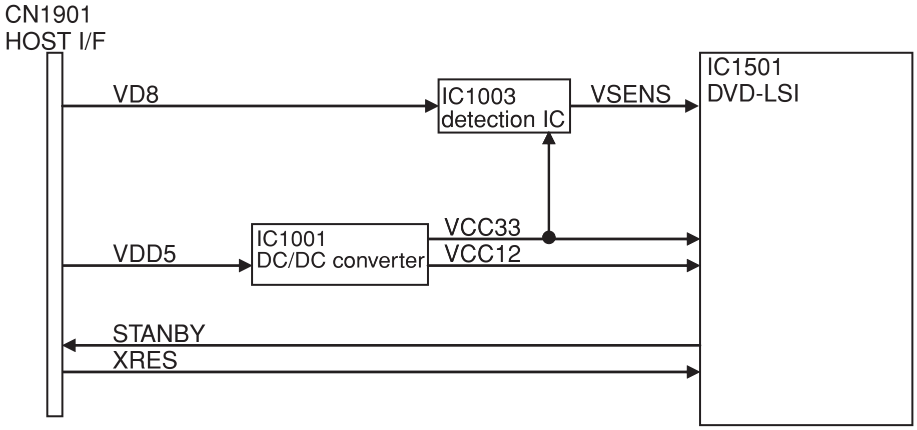


Fig 4.1: Power supply configuration and VSENS

<Check> Check the voltage at the "VSENS" test point while the power is on.
Use the "DGND1" test point at the reference.

NO.	Check point	Module No.	Specification value	Unit
1	VSENS - DGND1	ALL	VCC33 x 0.7 or more	V

Side A

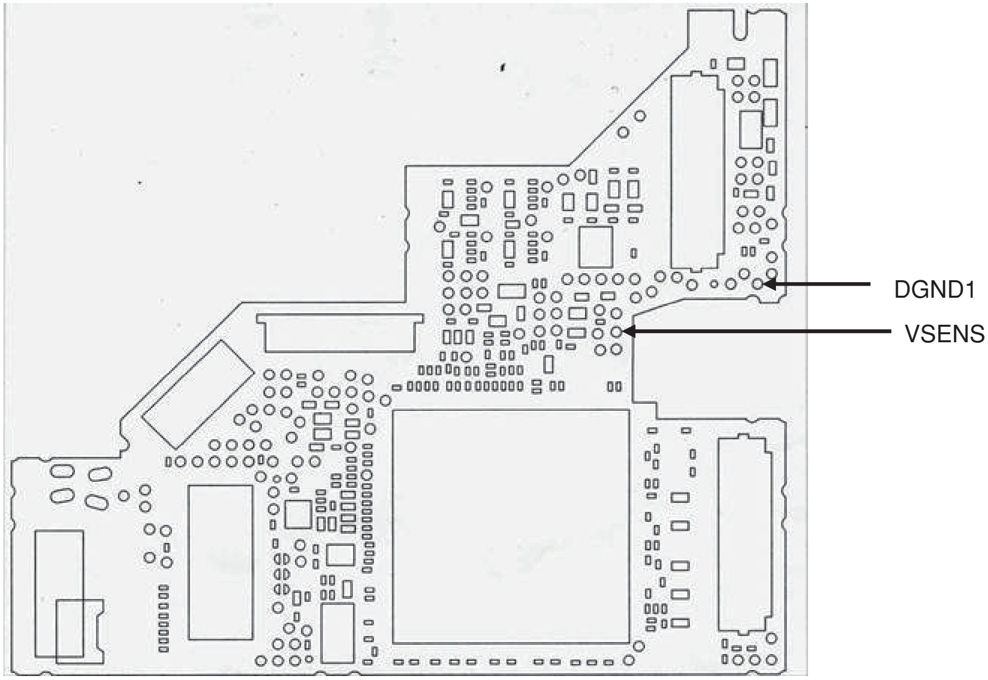


Fig 4.2: VSENS check point

Check 5: 27 MHz Normal?

<Outline> Each clock is created inside the IC1501 using the 27 MHz master crystal oscillator (X1501).

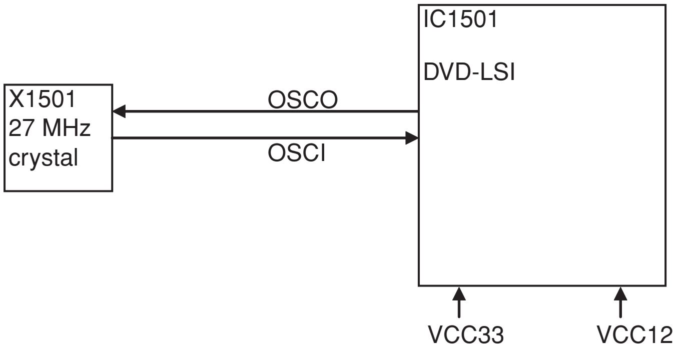


Fig 5.1: Clock configuration

<Check method> Turn the power on, and check with DGND being the reference.
In case of NG, check the applicable line, periphery of IC1501,
soldering of the peripheral components and defective components.

NO.	Check point	Module No.	Specification value	Unit
2	IC1501 169pin	ALL	27 MHz ± 50 ppm	ppm

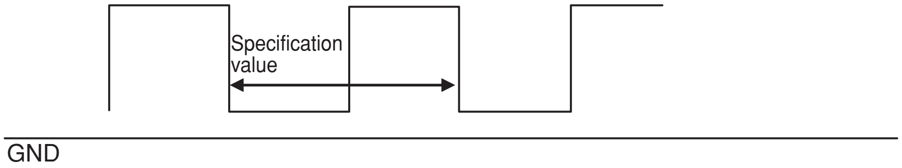


Fig 5.2: Clock specification value

Side A

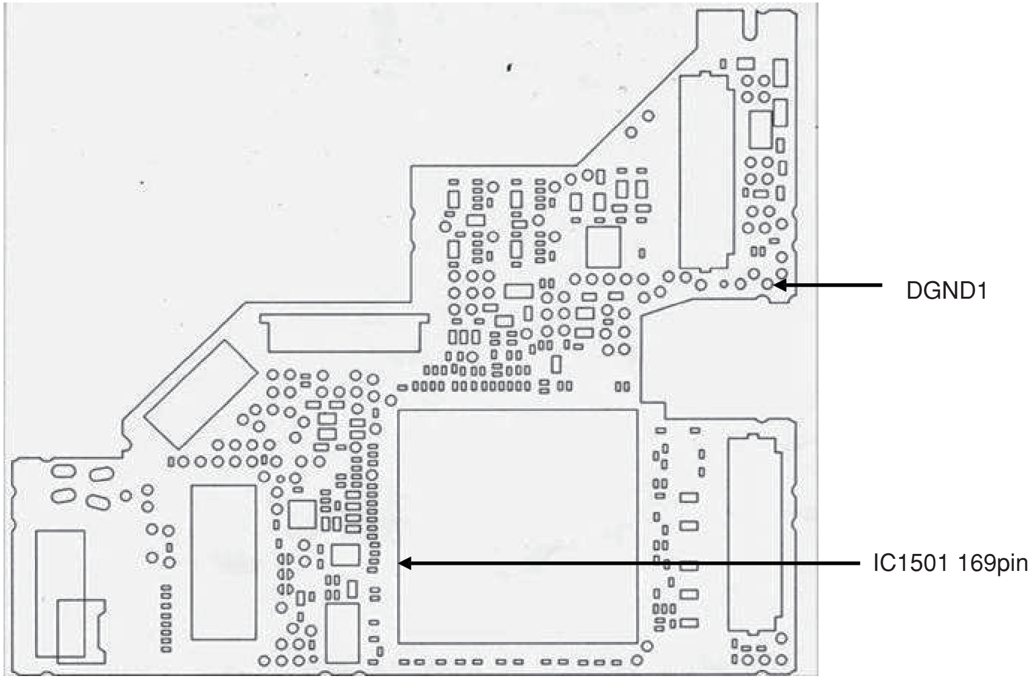


Fig 5.3: 27 MHz check point

Check 6: Is SDRAM I/F OK?

<Outline> In order to secure the MPEG stream data as the buffer,
the capacity of communication I/F SDRAM between the LSI and the memory is 128Mbit.
Be careful as XCSM, XWE, XCAS, XRAS and XSCM of IC1481 are called differently in IC1501,
namely NCSM, NWE, NCAS, NRAS, NCSM.

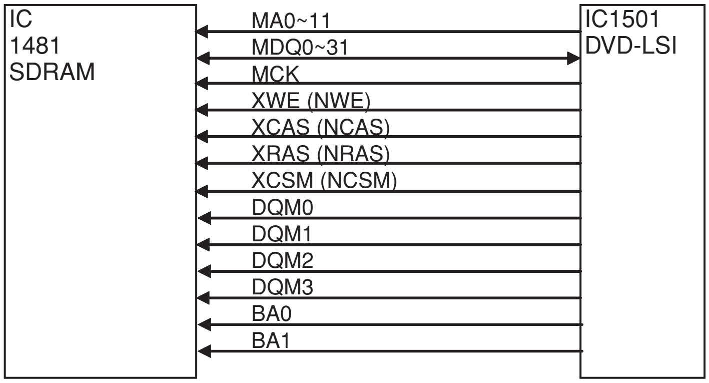
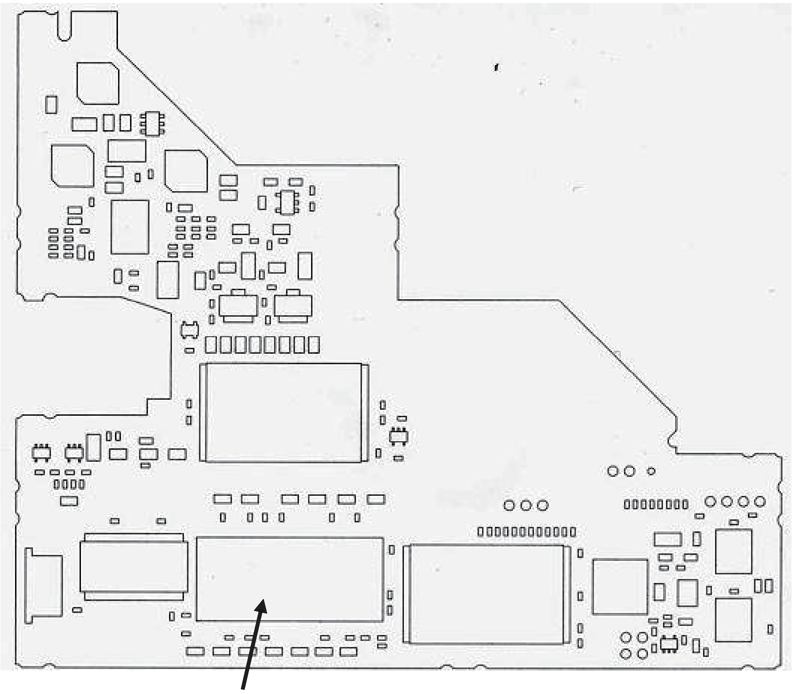


Fig 6.1: SDRAM I/F

<Check> Check the conductivity at "check point 1" and "check point 2" without power.
In case of NG, check the soldering and defective components throughout the "output → input" of the applicable section.

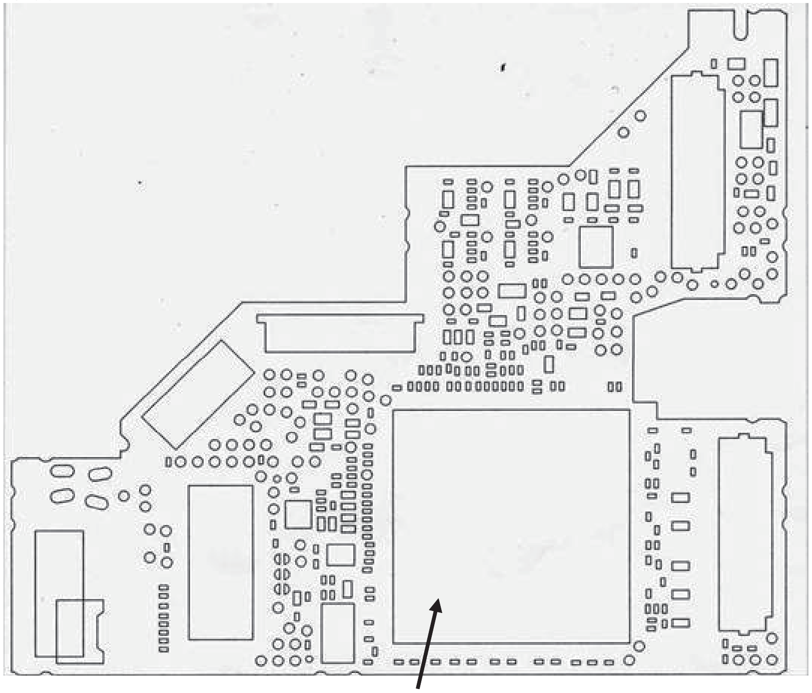
NO.	Signal name	Check point 1	Check point 2	Specification value
1	MA0	IC1481 25pin	IC1501 16pin	56 Ω ± 5 %
2	MA1	IC1481 26pin	IC1501 18pin	56 Ω ± 5 %
3	MA2	IC1481 27pin	IC1501 20pin	56 Ω ± 5 %
4	MA3	IC1481 60pin	IC1501 22pin	56 Ω ± 5 %
5	MA4	IC1481 61pin	IC1501 21pin	56 Ω ± 5 %
6	MA5	IC1481 62pin	IC1501 19pin	56 Ω ± 5 %
7	MA6	IC1481 63pin	IC1501 17pin	56 Ω ± 5 %
8	MA7	IC1481 64pin	IC1501 15pin	56 Ω ± 5 %
9	MA8	IC1481 65pin	IC1501 11pin	56 Ω ± 5 %
10	MA9	IC1481 66pin	IC1501 9pin	56 Ω ± 5 %
11	MA10	IC1481 24pin	IC1501 14pin	56 Ω ± 5 %
12	MA11	IC1481 21pin	IC1501 7pin	56 Ω ± 5 %
13	MDQ0	IC1481 2pin	IC1501 237pin	56 Ω ± 5 %
14	MDQ1	IC1481 4pin	IC1501 239pin	56 Ω ± 5 %
15	MDQ2	IC1481 5pin	IC1501 241pin	56 Ω ± 5 %
16	MDQ3	IC1481 7pin	IC1501 243pin	56 Ω ± 5 %
17	MDQ4	IC1481 8pin	IC1501 248pin	56 Ω ± 5 %
18	MDQ5	IC1481 10pin	IC1501 250pin	56 Ω ± 5 %
19	MDQ6	IC1481 11pin	IC1501 252pin	56 Ω ± 5 %
20	MDQ7	IC1481 13pin	IC1501 254pin	56 Ω ± 5 %
21	MDQ8	IC1481 74pin	IC1501 253pin	56 Ω ± 5 %
22	MDQ9	IC1481 76pin	IC1501 251pin	56 Ω ± 5 %
23	MDQ10	IC1481 77pin	IC1501 249pin	56 Ω ± 5 %
24	MDQ11	IC1481 79pin	IC1501 244pin	56 Ω ± 5 %
25	MDQ12	IC1481 80pin	IC1501 242pin	56 Ω ± 5 %
26	MDQ13	IC1481 82pin	IC1501 240pin	56 Ω ± 5 %
27	MDQ14	IC1481 83pin	IC1501 238pin	56 Ω ± 5 %
28	MDQ15	IC1481 85pin	IC1501 236pin	56 Ω ± 5 %
29	MDQ16	IC1481 31pin	IC1501 29pin	56 Ω ± 5 %
30	MDQ17	IC1481 33pin	IC1501 31pin	56 Ω ± 5 %
31	MDQ18	IC1481 34pin	IC1501 33pin	56 Ω ± 5 %
32	MDQ19	IC1481 36pin	IC1501 37pin	56 Ω ± 5 %
33	MDQ20	IC1481 37pin	IC1501 39pin	56 Ω ± 5 %
34	MDQ21	IC1481 39pin	IC1501 41pin	56 Ω ± 5 %
35	MDQ22	IC1481 40pin	IC1501 43pin	56 Ω ± 5 %
36	MDQ23	IC1481 42pin	IC1501 45pin	56 Ω ± 5 %
37	MDQ24	IC1481 45pin	IC1501 44pin	56 Ω ± 5 %
38	MDQ25	IC1481 47pin	IC1501 42pin	56 Ω ± 5 %
39	MDQ26	IC1481 48pin	IC1501 40pin	56 Ω ± 5 %
40	MDQ27	IC1481 50pin	IC1501 38pin	56 Ω ± 5 %
41	MDQ28	IC1481 51pin	IC1501 34pin	56 Ω ± 5 %
42	MDQ29	IC1481 53pin	IC1501 32pin	56 Ω ± 5 %
43	MDQ30	IC1481 54pin	IC1501 30pin	56 Ω ± 5 %
44	MDQ31	IC1481 56pin	IC1501 28pin	56 Ω ± 5 %
45	MCK	IC1481 68pin	IC1501 234pin	0.17 Ω ± or lower
46	XWE	IC1481 17pin	IC1501 3pin	56 Ω ± 5 %
47	XCAS	IC1481 18pin	IC1501 4pin	56 Ω ± 5 %
48	XRAS	IC1481 19pin	IC1501 5pin	56 Ω ± 5 %
49	XCSM	IC1481 20pin	IC1501 6pin	56 Ω ± 5 %
50	DQM0	IC1481 16pin	IC1501 255pin	56 Ω ± 5 %
51	DQM1	IC1481 71pin	IC1501 256pin	56 Ω ± 5 %
52	DQM2	IC1481 28pin	IC1501 26pin	56 Ω ± 5 %
53	DQM3	IC1481 59pin	IC1501 27pin	56 Ω ± 5 %
54	BA0	IC1481 22pin	IC1501 8pin	56 Ω ± 5 %
55	BA1	IC1481 23pin	IC1501 10pin	56 Ω ± 5 %

Side B



Check point 1 (IC1481)

Side A



Check point 2 (IC1501)

Fig 6.2: SDRAM I/F check point

Check 7: Is VD8, VCC5 power supply voltage OK?

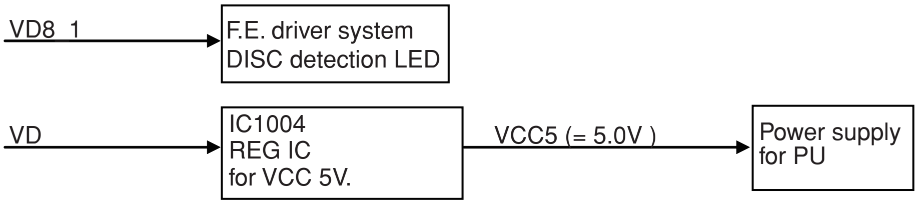


Fig 7.1: Power supply configuration

<Check> Check the voltage at the "VD8_1, VD and VCC5_1" test point while the power is on.
Use the "PGND3 and AGND1" test point at the reference.

NO.	Check point	Module No.	Specification value	Unit
1	VD8_1 - PGND3	ALL	8.0 ± 0.4	V
2	VD - PGND3	ALL	8.0 ± 0.4	V
3	VCC5_1- AGND1	ALL	5.0 ± 0.1	V

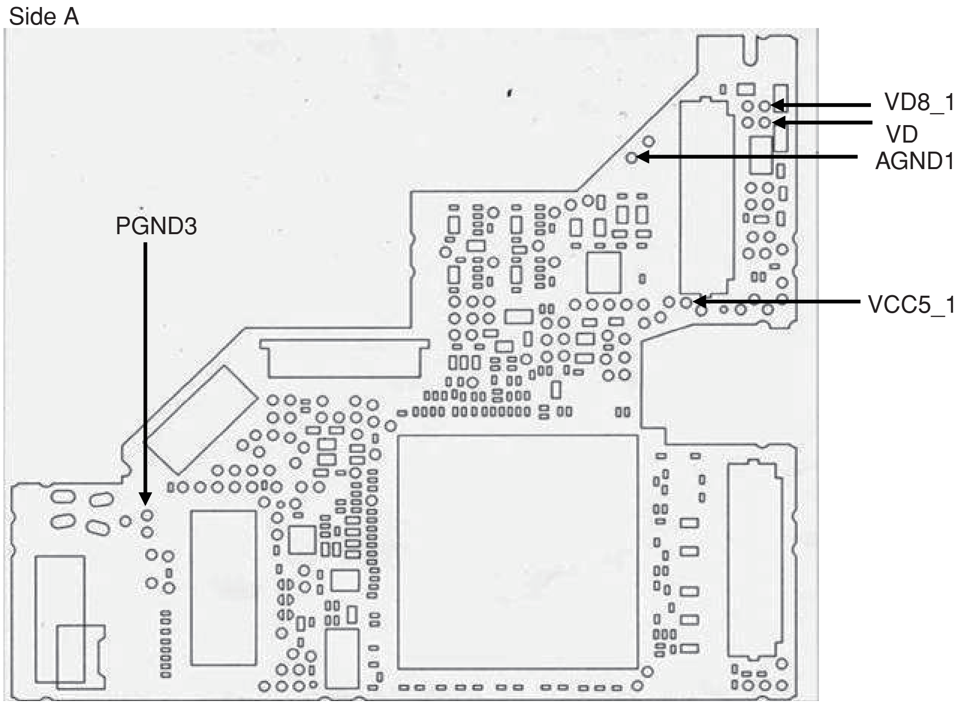


Fig 7.2: VD8, VCC5 voltage check points

Check 8: Is AVCC5 voltage OK?

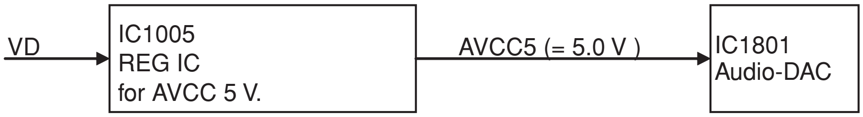


Fig 8.1: Power supply configuration

<Check> Playback DVD-REF-A1 TITLE 1 and check the voltage at the stylus.
Check with PGND and GNDAU being the reference.

NO.	Check point	Module No.	Specification value	Unit
1	VD - PGND_3	ALL	8.0 ± 0.4	V
2	AVCC5 - GNDAU1	ALL	5.0 ± 0.1	V

Side A

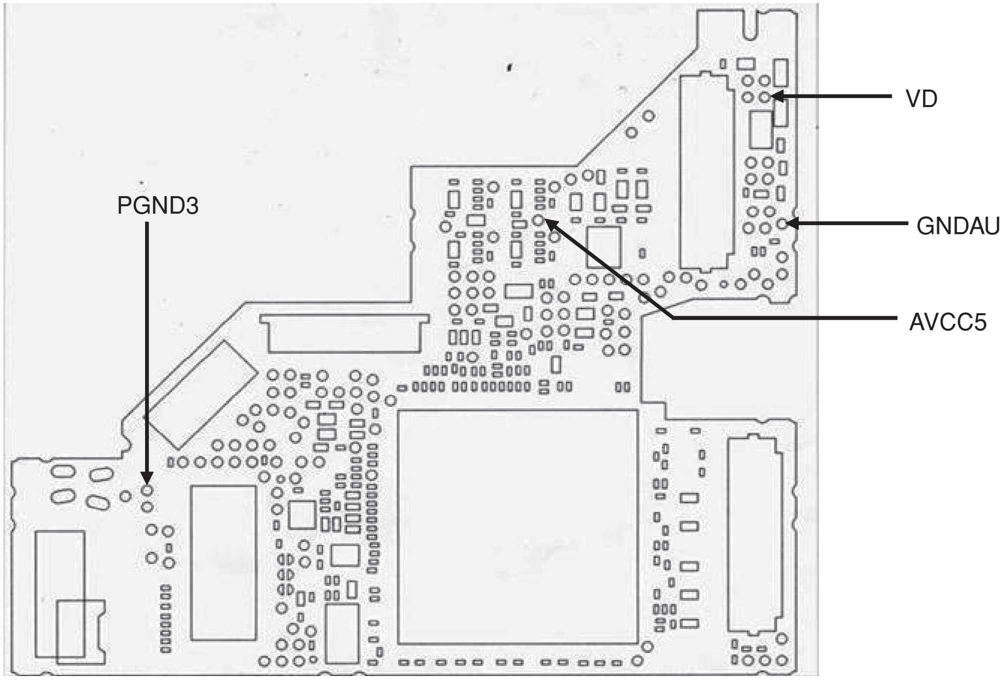


Fig 8.2: VD8, AVCC5 voltage check points

Check 9: Is DACCLK normal?

<Outline> DACCLK for Audio-DAC is created by IC1501 using the 27 MHz master crystal oscillator (X1501).

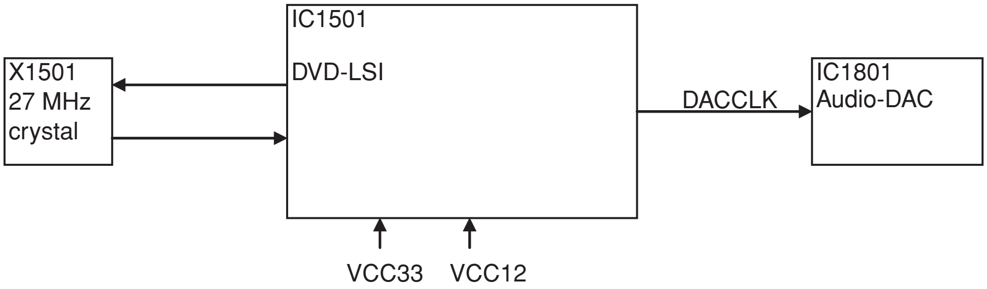


Fig 9.1: Clock configuration

<Check method>
DVD: DVD-REF-A1 TITLE 1
CD: Playback a normal CDDA.
Common to all DVD-V compatible modules.
Check with DGND being the reference.
In case of NG, check the applicable line, the periphery of IC1501, soldering of the peripheral components and defective components.

NO.	Check point 1 (stylus)	Media	Specification value 1	Specification value 2	Specification value 3
1	DACCK	DVD	2.0 V~VCC33 V	DGND~0.8 V	36.864 0 MHz ± 300 ppm
2	DACCK	CD	2.0 V~VCC33 V	DGND~0.8 V	33.868 8 MHz ± 300 ppm

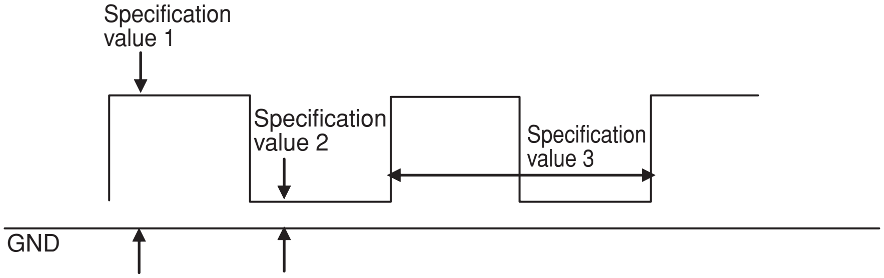
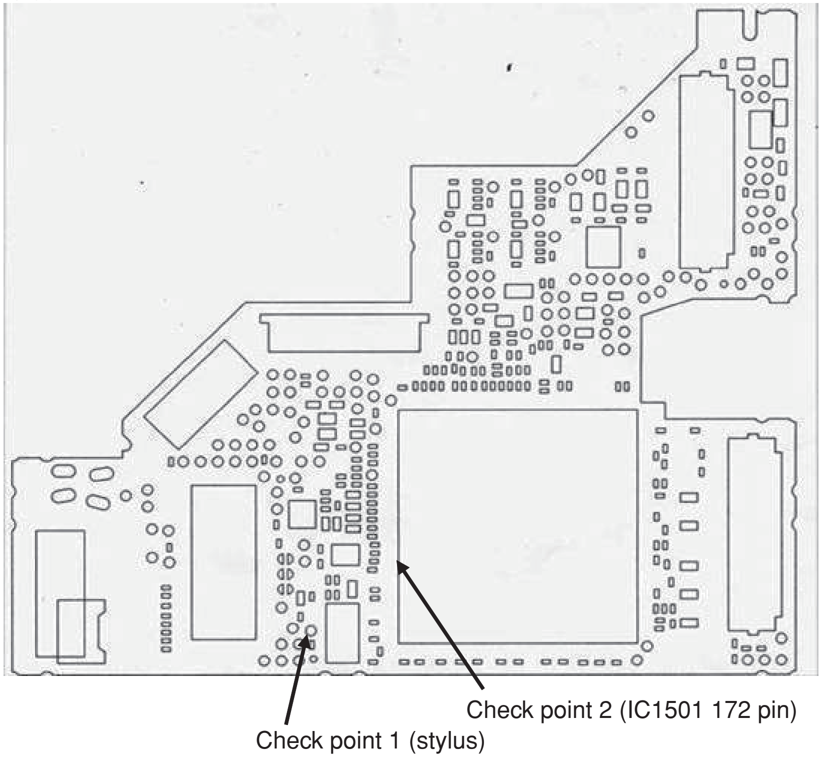


Fig 9.2: Clock specification value

Side A



Check point 2 (IC1501 172 pin)

Check point 1 (stylus)

Fig 9.3: 27 MHz, DACCLK check point

Check 10: Is the audio circuit OK?

<Outline> The serial 3 lines digital output + DACCLK, output from DVD-LSI (IC1501), are converted to analog audio signal at Audio-DAC (IC1801) and are output from the HOST I/F (CN1901).
Simultaneously, the analog MUTE signal is also output from DVD-LSI (IC1501) via the HOST I/F.
The digital audio signal (IECOUT), output from DVD-LSI (IC1501), is output via CN1852.

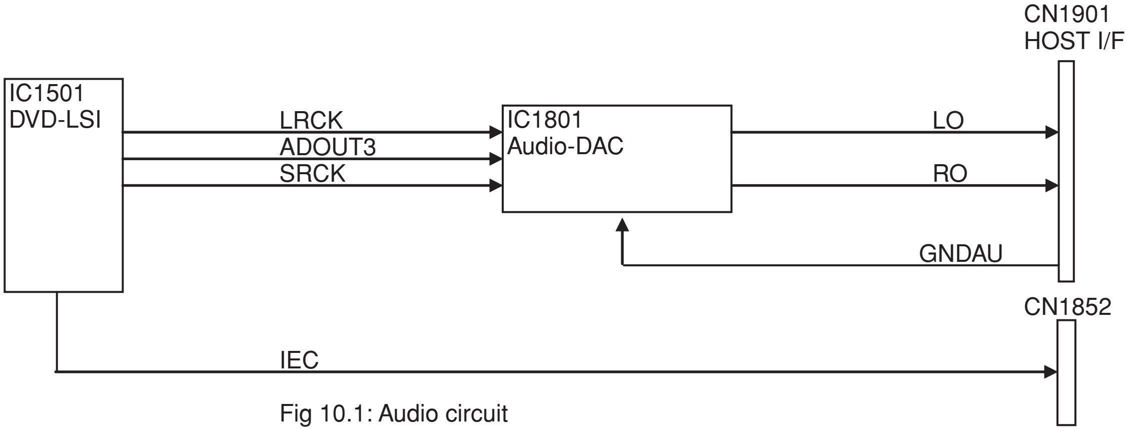


Fig 10.1: Audio circuit

<Check method> Playback DVD-REF-A1 TITLE 2 CHAPTER 1 (48 k/16 bit 1 kHz 0 dB),
and check with DGND being the reference.
In case of NG, check the applicable line, periphery of major components as described in the above drawing, soldering of the peripheral components and defective components.

NO.	Check point 1 (stylus)	Specification value 1	Specification value 2	Reference waveform
1	ADOUT3	VCC33 V-0.6 V or higher	0.4 V or lower	Waveform 1
2	SRCK	VCC33 V-0.6 V or higher	0.4 V or lower	Waveform 2
3	LRCK	VCC33 V-0.6 V or higher	0.4 V or lower	Waveform 3

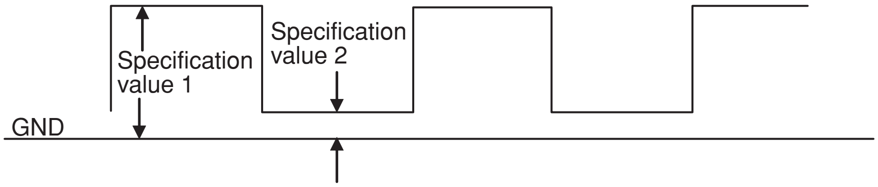


Fig 10.2: Serial 3 lines specification value

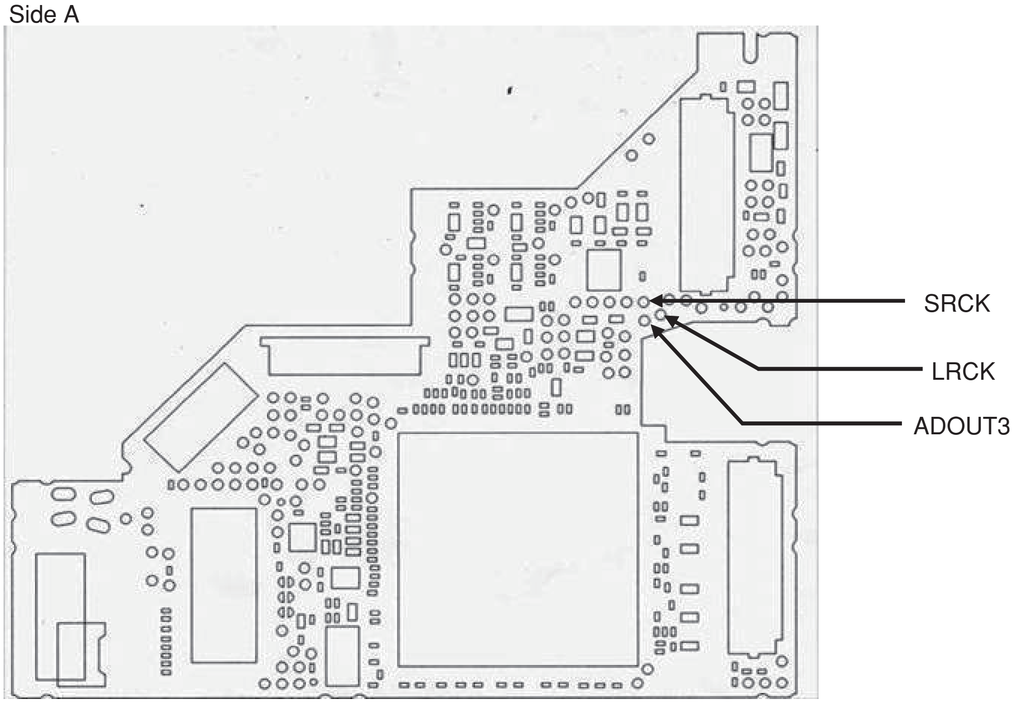
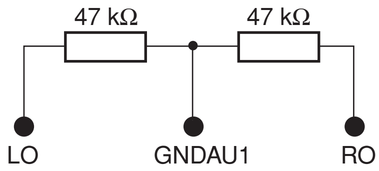


Fig 10.3: Serial 3 lines check points

The following checks shall be conducted using the following measurement circuits with GNDAU1 being the reference.



NO.	Check point 1 (stylus)	Specification value (rms)	Reference waveform
4	LO	1 400 ± 150 mV	Waveform 4
5	RO	1 400 ± 150 mV	Waveform 4

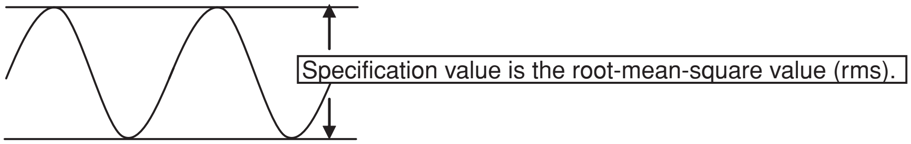


Fig 10.4: Analog audio out (LO, RO) specification value.

Side A

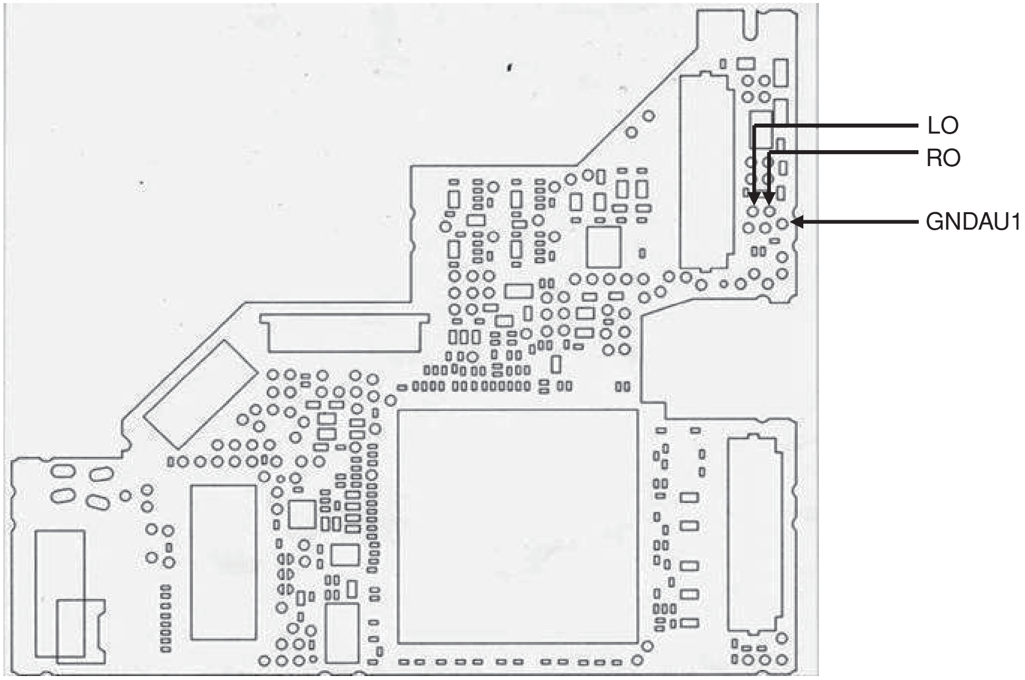


Fig 10.5: Analog audio out check point

Check with DGND being the reference.
Check 2pin cord after connecting it to a jig, etc.

NO.	Check point 1 (stylus)	Specification value 1	Specification value 2	Reference waveform
6	IEC	VCC33 V-0.6 V or higher	0.4 V or lower	Waveform 5

Side A

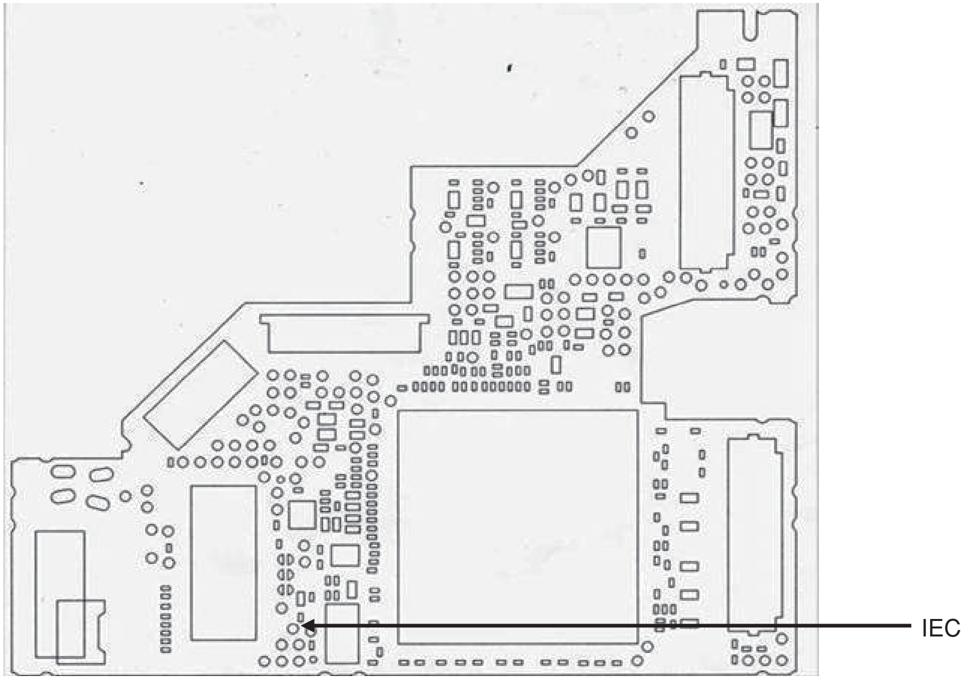
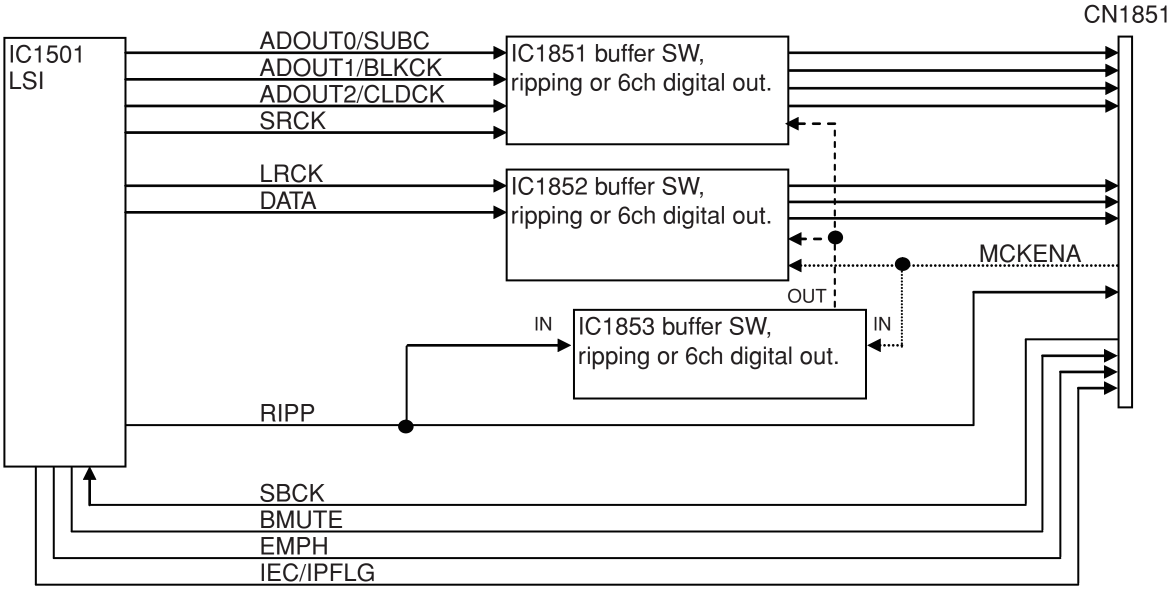


Fig 10.6: Digital audio signal (IECOUT) check point

<Outline> At the time of 6ch digital out, the serial 6 lines output from DVD-LSI (IC1501) is output via CN1581.
Furthermore, at the time of ripping, the serial 3 lines digital output + SUBC, output from DVD-LSI (IC1501), is output in 4 times speed via CN1851.



The signal at CN1851 for 6ch digital out/Ripping.

Pin No.	Pin name	6ch digital out	Ripping
2	SRCK	SRCK	SRCK
4	LRCK	LRCK	LRCK
6	AD0/SUBC	ADOUT0	SUBC
8	AD1/BLK	ADOUT1	BLKCK
10	AD2/CLD	ADOUT2	CLDCK
12	AD3/DATA	ADOUT3	DATA
14	IEC/IPFLG	IEC	IPFLG
16	-	-	-
18	SBCK	-	SBCK
20	BMUTE	BMUTE	-
21	MCKENA	Low	High
22	RIPP	High	Low
23	EMPH	EMPH	EMPH
Pins 1, 3, 5, 7, 9, 11, 13, 15, 17, 19 and 24 are GNDD.			

Fig 10.7: 6ch digital out/Ripping circuit

Playback DVD-REF-A1 TITLE22 CHAPTER 1, and check with GNDD being the reference.
In case of NG, check the applicable line, the periphery of the major components in the drawing above, soldering of the peripheral components and defective components.

Check 24pin FFC after connecting it to a jig, etc.

NO.	Check point 1 (stylus)	Specification value 1	Specification value 2
7	SRCK	VCC33 V-0.6 V or higher	0.4 V or lower
8	LRCK	VCC33 V-0.6 V or higher	0.4 V or lower
9	ADOUT0	VCC33 V-0.6 V or higher	0.4 V or lower
10	ADOUT1	VCC33 V-0.6 V or higher	0.4 V or lower
11	ADOUT2	VCC33 V-0.6 V or higher	0.4 V or lower
12	IEC	VCC33 V-0.6 V or higher	0.4 V or lower
13	MCKENA	-	VCC33 V x 0.3 V or lower

Rip common CDDA, and check with GNDD being the reference.
In case of NG, check the applicable line, the periphery of the major components in the drawing above, soldering of the peripheral components and defective components.

Check 24pin FFC after connecting it to a jig, etc.

NO.	Check point 1 (stylus)	Specification value 1	Specification value 2
14	SRCK	VCC33 V-0.6 V or higher	0.4 V or lower
15	LRCK	VCC33 V-0.6 V or higher	0.4 V or lower
16	SUBC	VCC33 V-0.6 V or higher	0.4 V or lower
17	BLKCK	VCC33 V-0.6 V or higher	0.4 V or lower
18	CLDCK	VCC33 V-0.6 V or higher	0.4 V or lower
19	DATA	VCC33 V-0.6 V or higher	0.4 V or lower
20	SBCK	VCC33 V-0.6 V or higher	0.4 V or lower
21	RIPP	-	VCC33 V x 0.3 V or lower

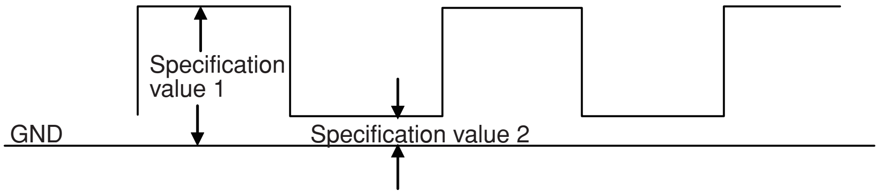
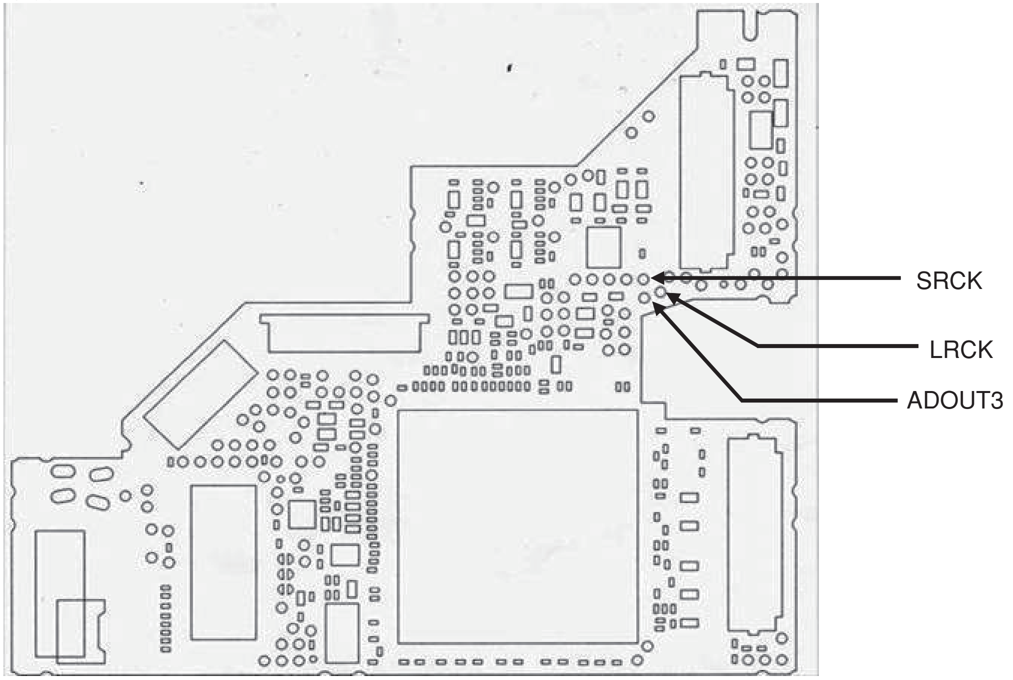


Fig 10.8: 6ch digital out/Ripping specification value

Side A



Side B

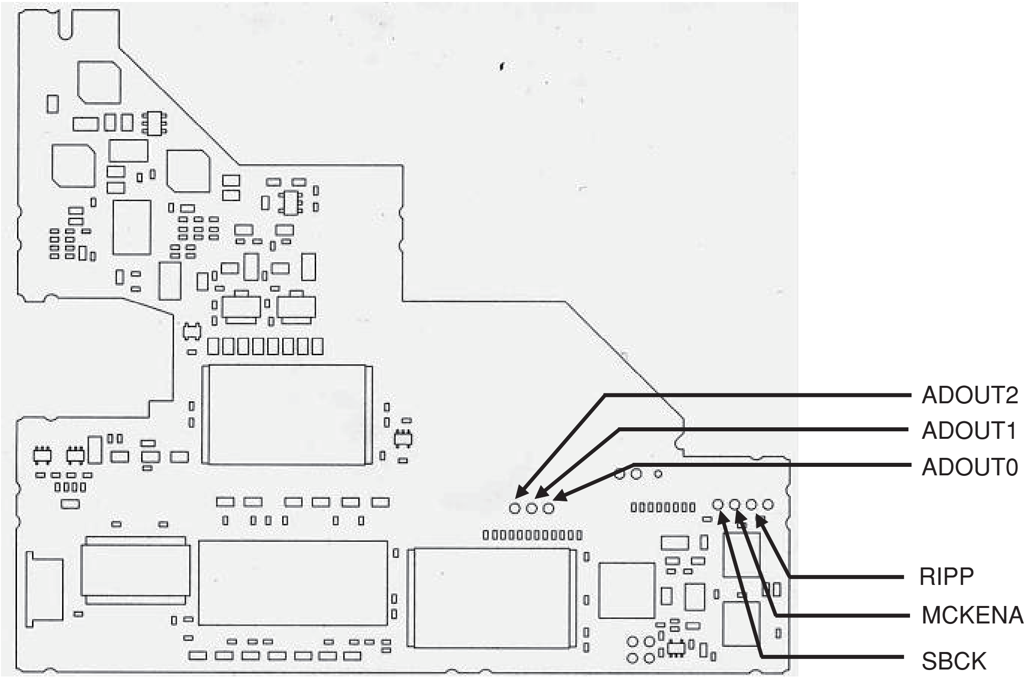


Fig 10.9: 6ch digital out/Ripping check point

Check 11: Is the video circuit OK?

<Outline> Composite signal and component signal are output from DVD-LSI (IC1501), and are output from the HOST I/F (CN1901) via a buffer circuit.

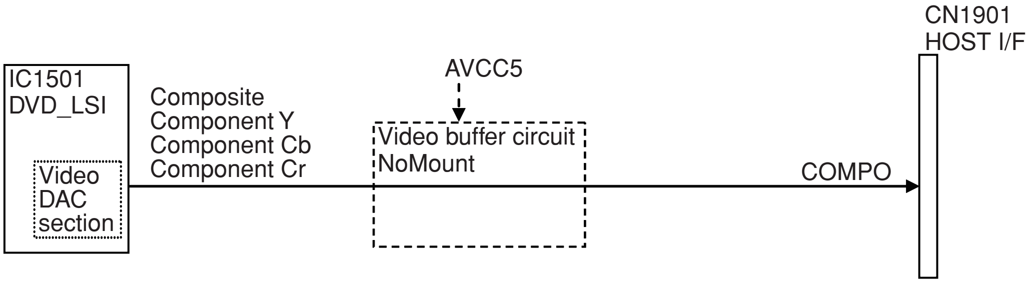


Fig 11.1: Video circuit

<Checking method> Playback DVD-REF-A1 TITLE2 CHAPTER5 (WHITE 100%), and monitor COMPO signal with an oscilloscope with GNDV1 (stylus) being the reference. Set the trigger mode to "TV trigger" and the trigger line to "150 line".

Check point 1 (stylus)

NO.		Specification value	Reference waveform
1	COMPO	1 000 mVpp ± 5 %	Waveform 6

In case of NG, check the applicable line, the periphery of the major components in the drawing above, soldering of the peripheral components and defective components.

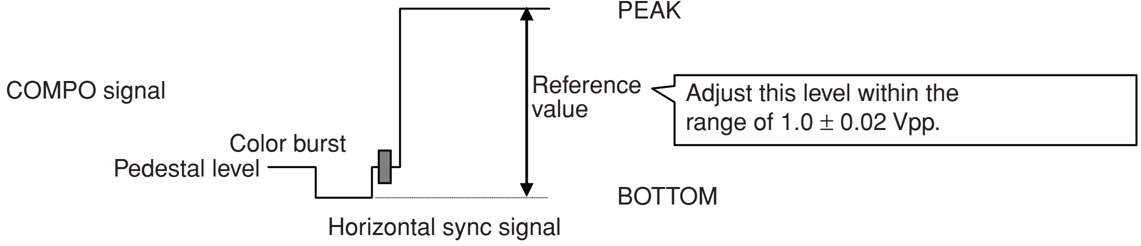


Fig 11.2: Waveform for the case of composite white 100% output

<Video level readjustment method>

In case the video composite output is outside of the specification value, readjust the level according to the method described below.

Turn the volume (VR1671) to adjust the video level within the range of 1.0 ± 0.02 Vpp.

The adjustment specification is 1.0 ± 0.02 Vpp.

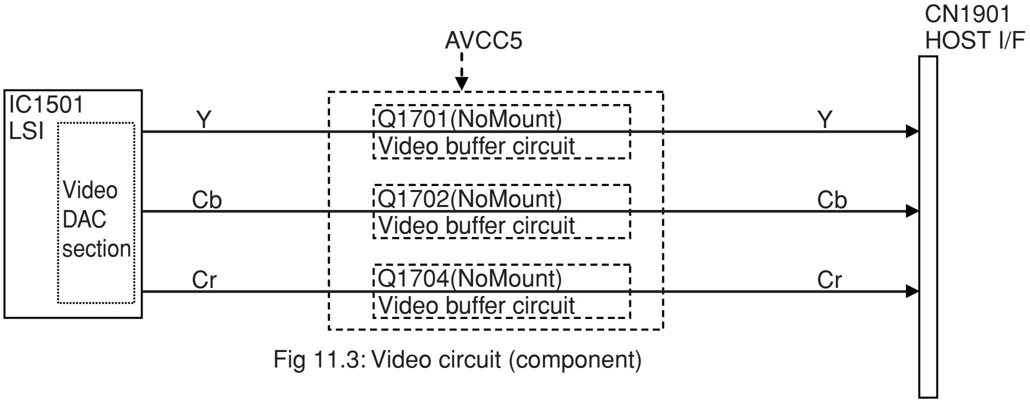


Fig 11.3: Video circuit (component)

<Checking method> Playback DVD-REF-A1 TITLE2 CHAPTER19 (100% Color Bars), and monitor Y, Cb, and Cr signal with an oscilloscope with GNDV1 (stylus) being the reference. Set the trigger mode to "TV trigger" and the trigger line to "150 line".

NO.	Check point 1 (stylus)	Specification value	Reference waveform
2	Y	1 000 mVpp ± 5%	Waveform 7
3	Cb	700 mVpp ± 5%	Waveform 7
4	Cr	700 mVpp ± 5%	Waveform 7

In case of NG, check the applicable line, the periphery of the major components in the drawing above, soldering of the peripheral components and defective components.

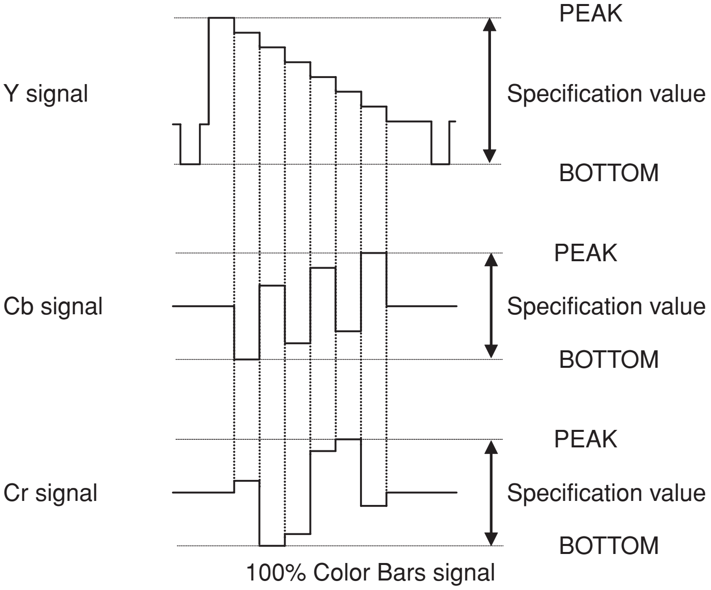


Fig 11.4 Waveform for the case of component 100% Color Bars output

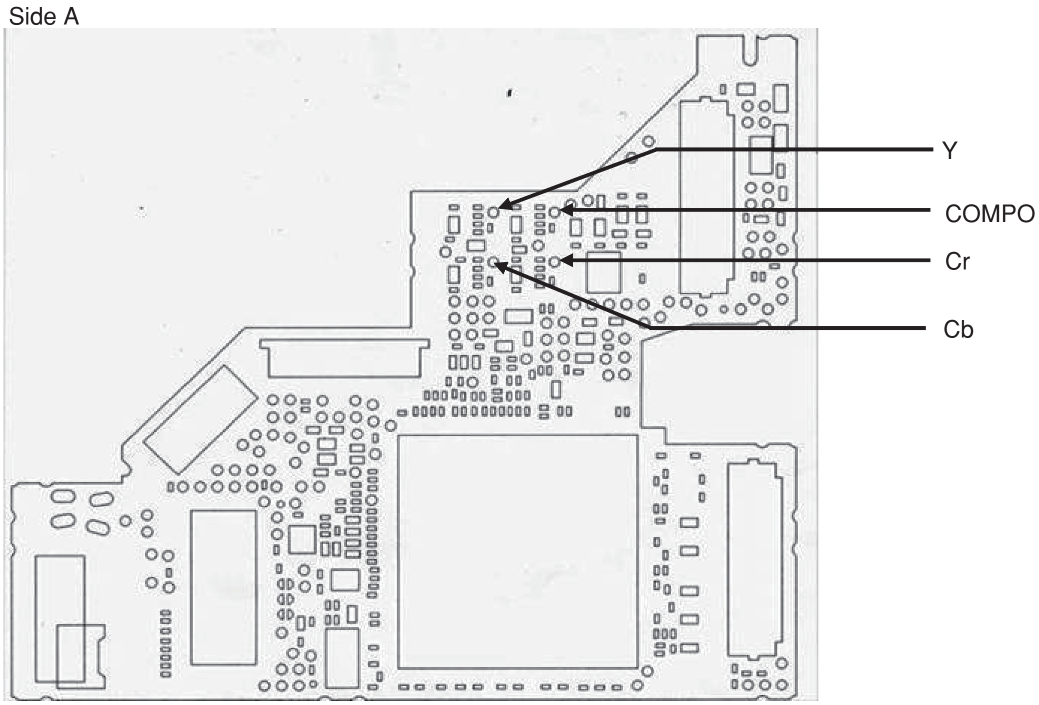


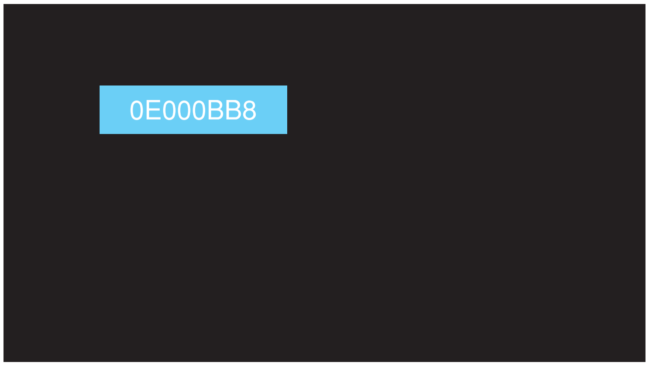
Fig 11.5: VIDEO signal check point

Check 12:How to judge whether the flash memory has reached its life or not.

If the reaction to user operation is slow or operation is slow in general, there is a possibility that the flash memory has reached its life.
Make judgment regarding the flash memory life by looking at the display of the LD energizing time.

1.Let the LD energizing time displayed.
  (Refer to the FE test mode for the method of displaying the LD energizing time.)
2.If the second digit from the left of the energizing time display is showing E,
  such as "*E** ****", it means that the flash memory has reached its life.

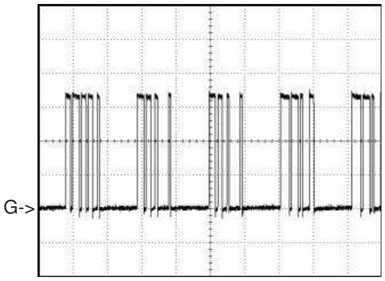
Example:



0E000BB8

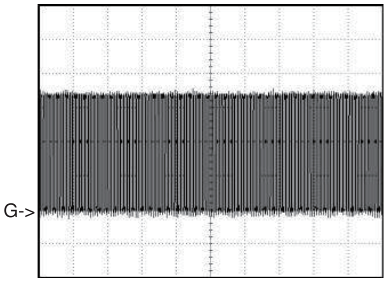
AUDIO VIDEO

CH1 : ADOUT3
Reference voltage: DGND2 1 V/div. 5 µsec/div



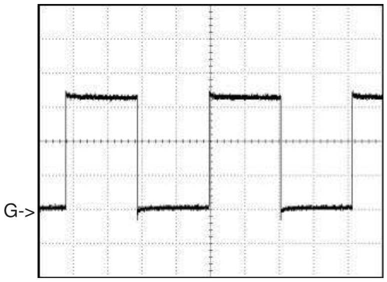
Waveform 1

CH1 : SRCK
Reference voltage: DGND2 1 V/div. 5 µsec/div



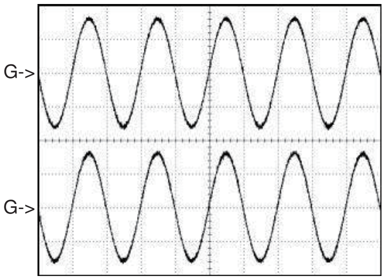
Waveform 2

CH1 : LRCK
Reference voltage: DGND2 1 V/div. 5 µsec/div



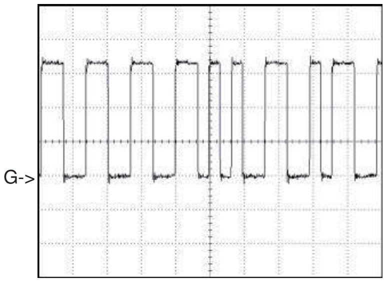
Waveform 3

CH1 : LO
CH2 : RO
Reference voltage: GNDAU2 1 V/div. 500 µsec/div



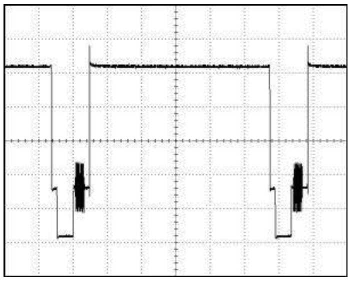
Waveform 4

CH1 : IECOUT
Reference voltage: DGND2 1 V/div. 500 nsec/div



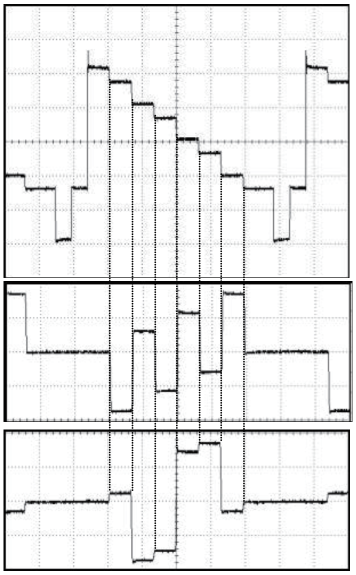
Waveform 5

[WHITE 100IRE]
CH1 : COMPO
Reference voltage: GNDV1 200 mV/div. 10 µsec/div



Waveform 6

[100% Color Bars]
CH1 : Y
CH2 : Cb
CH3 : Cr
Reference voltage: GNDV1 200 mV/div. 5 µsec/div

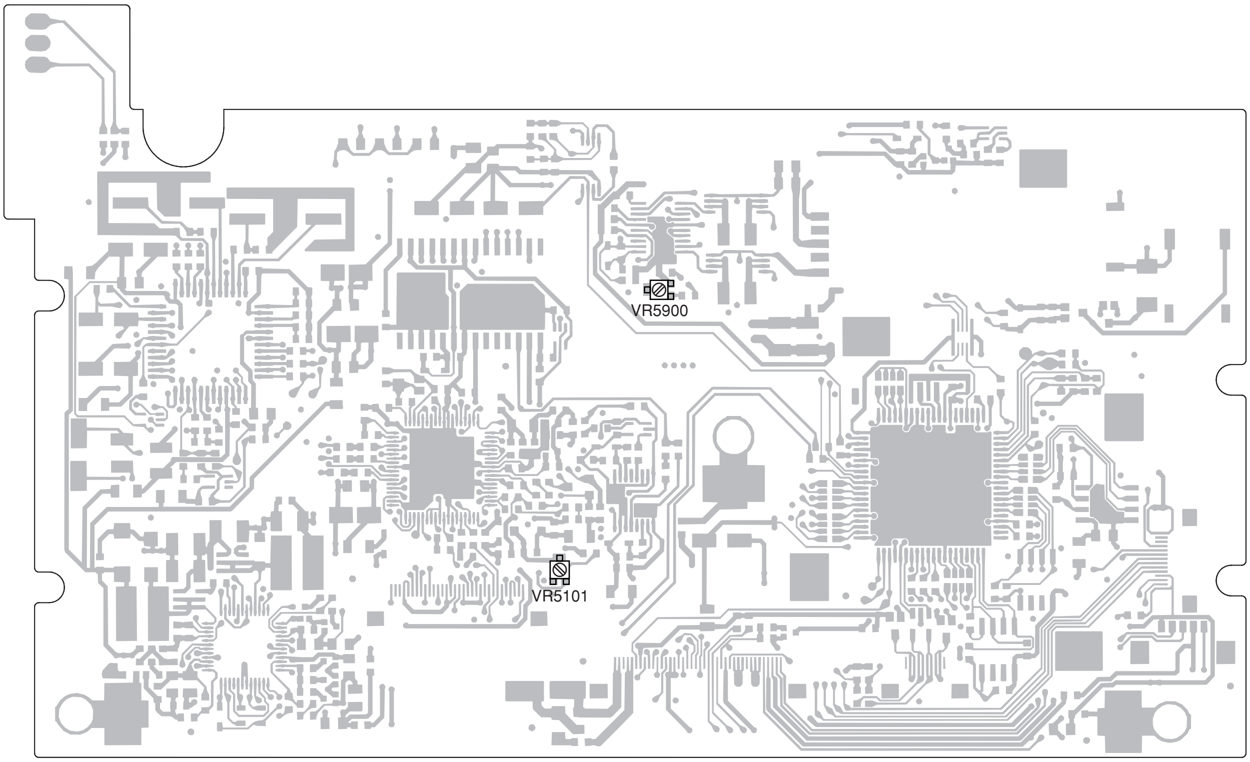


Waveform 7

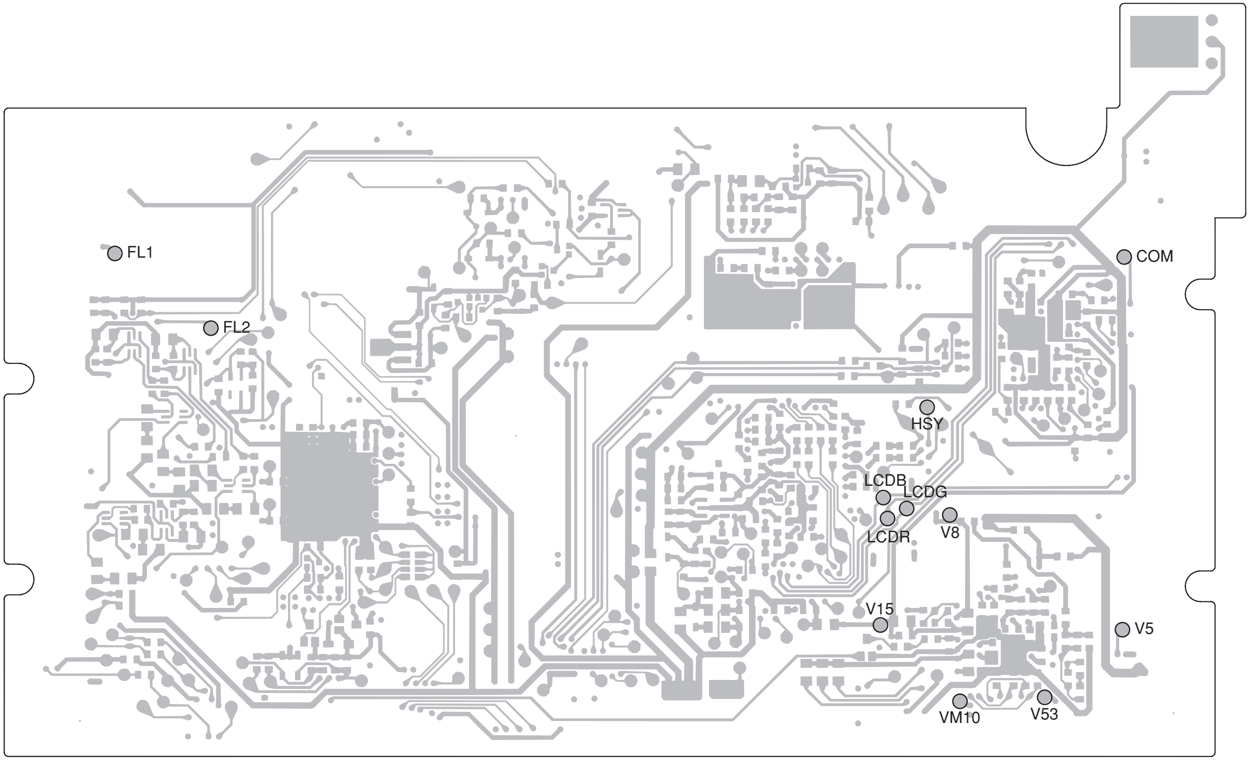
6.3 MONITOR UNIT ADJUSTMENT

● Adjustment point

MONITOR UNIT(SIDE A)



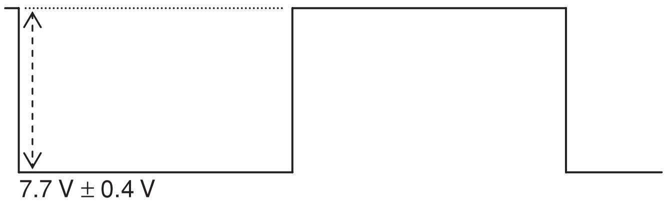
MONITOR UNIT(SIDE B)

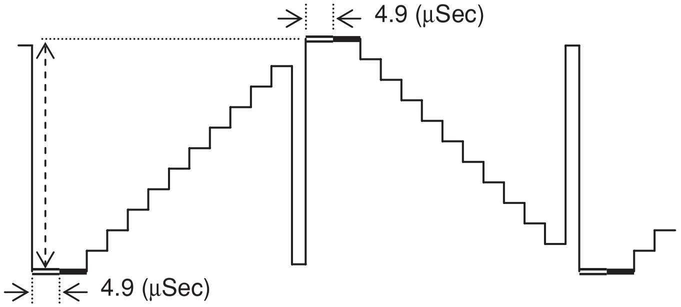
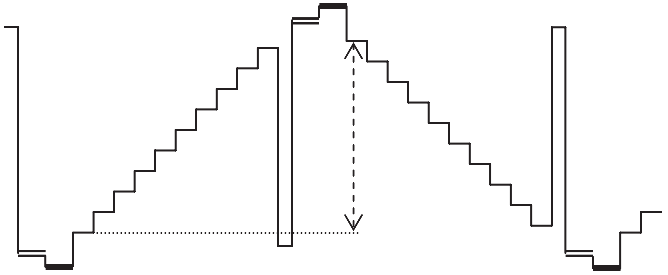
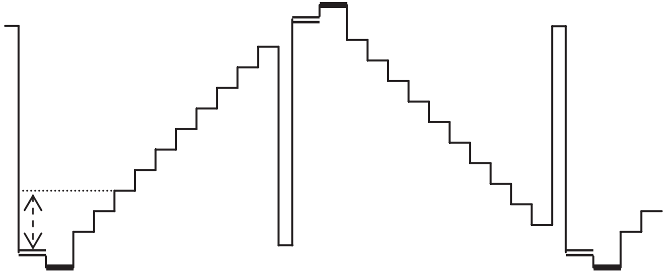


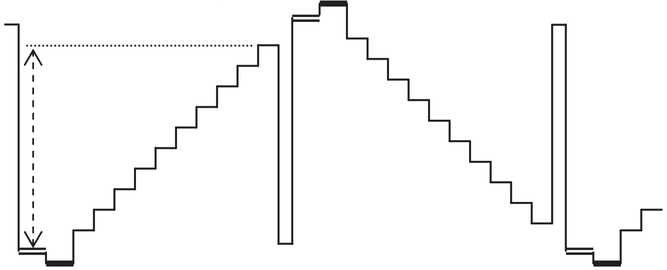
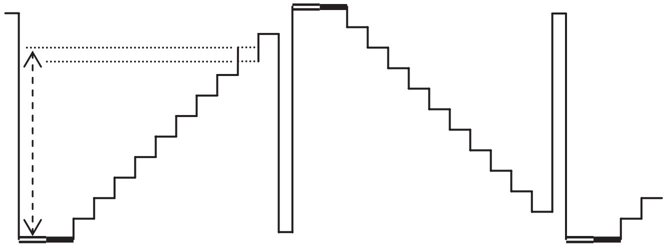
● Power supply check

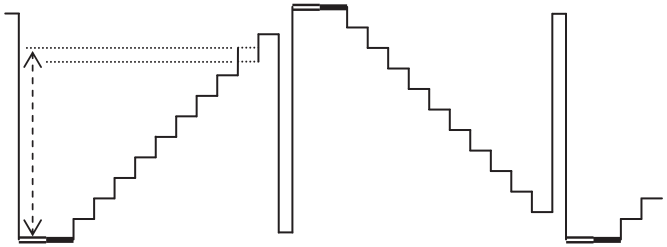
	Adjustment item	Measuring point	Adjusting point	Measuring method and specs.	Remarks
1	5 V power supply verification	TP_V5		5.0 V ± 0.3 V DC	
2	8 V power supply verification	TP_V8		8.0 V ± 0.5 V DC	
3	5.3 V power supply verification	TP_V53		5.3 V ± 0.5 V DC	
4	15 V power supply verification	TP_V15		15.0 V ± 0.7 V DC	
5	-10 V power supply verification	TP_VM10		-10.0 V ± 0.8 V DC	

● Image related adjustment

	Adjustment item	Measuring point	Adjusting point	Measuring method and specs.	Remarks
6	PLL free run adjustment	TP_HSY	VR5101	f = 15.820 kHz to 15.830 kHz	Set TP_SYNI to Low. (Release it after PLL free run adjustment.) [Effect of deviation from the adjusted value] • No sync on the screen. • Displayed position on the screen shifts substantially to the left or to the right.
7	Register temporary setting	IC5011	IC5011 register	COM DC : 84 BRIGHT : 128 CONT-RGB1 : 255 RGB AMPLITUDE : 255 COM AMPLITUDE : 188 GAMMA 1 : 255 GAMMA 2 : 255 SUB-BRIGHT R : 128 SUB-BRIGHT B : 128 CONT-VIDEO : 221 COLOR : 100 PICTURE : 16 TINT : 141 (NTSC) PALTINT : 150 (PAL) PHASE : 42 CONT-RGB2 : 221 INPUT MODE/SW : 00000000	When you replaced EEPROM(IC5303), set it after executing reset of EEPROM. Procedure of reset 1. IC5300_pin20(EPRRST) is connected with GND. 2. Power-on of the product. 3. Power-off of the product. 4. IC5300_pin20(EPRRST) is opened.
8	COM AMP level verification	TP_COM			[Effect of deviation from the adjusted value] • Dark screen (large amplitude) • Bright screen (small amplitude)

	Adjustment item	Measuring point	Adjusting point	Measuring method and specs.	Remarks
9	RGB AMP adjustment	TP_LCDG	IC5011 register RGB AMPLITUDE (10h)	10 STEP signal (RGB 525 lines / 60 Hz) input 3.80 V ± 0.02 V (clamp level ~ clamp level of the next line) 	═ : section is the clamp level period. The signal inverting timing being the reference, the following periods are indicated. Forward rotation side…4.9 (µsec) Backward rotation side…4.9 (µsec) It is different from the black level during the image display period. [Effect of deviation from the adjusted value] The side panel brightness at the time of screen mode (normal) is affected. • Floating white (small amplitude) • Sinking black (large amplitude)
10	Bright adjustment	TP_LCDG	IC5011 register BRIGHT (11h)	10 STEP signal (RGB 525 lines / 60 Hz) input 2.00 V ± 0.02 V (10% white ~ 10% white of the next line) 	[Effect of deviation from the adjusted value] • The screen is whitish (small amplitude) • The screen is dark (large amplitude)
11	Gamma 1 adjustment	TP_LCDG	IC5011 register GAMMA 1 (08h)	10 STEP signal (RGB 525 lines / 60 Hz) input 2.00 V ± 0.02 V (clamp level ~ 30% white) 	═ : section is the clamp level period. If there are the black section and the white 30% section during 1 horizontal scanning, it is OK even if it is not a 10 STEP signal. [Effect of deviation from the adjusted value] • The screen is whitish (high voltage) • The screen is dark (low voltage)

	Adjustment item	Measuring point	Adjusting point	Measuring method and specs.	Remarks
12	Gamma 2 adjustment	TP_LCDG	IC5011 register GAMMA 2 (09h)	10 STEP signal (RGB 525 lines / 60 Hz) input 4.00 V ± 0.03 V (clamp level ~ 100% white) 	══ : section is the clamp level period. If there are the black section and the white 100% section during 1 horizontal scanning, it is OK even if it is not a 10 STEP signal. [Effect of deviation from the adjusted value] • The bright section is scattered white (high voltage) • The screen is dark (low voltage)
13	Register setting	IC5011	IC5011 register	CONT-RGB1(06h) : DDh ····· *1	*1 : A value set to IC5011 when the user contrast adjustment step is 00.
14	Sub bright R adjustment	TP_LCDG TP_LCDR	IC5011 register SUB-BRIGHT R (12h)	10 STEP signal (RGB 525 lines / 60 Hz) input Adjust SUB-BRIGHT R in a way that the difference of the following two will be within ± 0.02 V. • The clamp level to 90% white level of TP_LCDG. • The clamp level to 90% white level of TP_LCDR. 	If there are the clamp level and the white 90% section during 1 horizontal scanning, it is OK even if it is not a 10 STEP signal. [Effect of deviation from the adjusted value] • The screen is reddish (high voltage on the LCDR side) • The screen is bluish (low voltage on the LCDR side)

	Adjustment item	Measuring point	Adjusting point	Measuring method and specs.	Remarks
15	Sub-bright B adjustment	TP_LCDG TP_LCDB	IC5011 register SUB-BRIGHT B (13h)	10 STEP signal (RGB 525 lines / 60 Hz) input Adjust SUB-BRIGHT B in a way that the difference of the following two will be within ± 0.02 V. • The clamp level to 90% white level of TP_LCDG. • The clamp level to 90% white level of TP_LCDB. 	If there are the clamp level and the white 90% section during 1 horizontal scanning, it is OK even if it is not a 10 STEP signal. [Effect of deviation from the adjusted value] • The screen is bluish (high voltage on the LCDR side) • The screen is yellowish (low voltage on the LCDR side)
16	PAL demodulation adjustment (COLOR preliminary adjustment)	TP_LCDR	IC5011 register COLOR (02h)	100% color bar signal (PAL) input Execute step ① "Method of color adjustment (RB5P0090M)" after entering "PHASE ADJUSTMENT".	**AVIC-D3/XU/EW5 only** 100% color bar signal… A color bar of which the brightness level of the white section is 100% and the color carrier amplitude is 100% modulation. (EIA color bar, BBC color bar) An adjustment with the rise up edge of the FRPV signal being the trigger is recommended. The result of color adjustment is not saved in the EEPROM. [Effect of deviation from the adjusted value] PALTINT and PHASE adjustment can no longer be made appropriately.
17	PAL demodulation adjustment (PALTINT)	TP_LCDR	IC5011 register TINT (03h)	100% color bar signal (PAL) input Execute step ② "Method of color adjustment (RB5P0090M)" after entering "PHASE ADJUSTMENT".	**AVIC-D3/XU/EW5 only** An adjustment with the rise up edge of the FRPV signal being the trigger is recommended. [Effect of deviation from the adjusted value] Color flickering or horizontal stripes are observed during PAL image display.

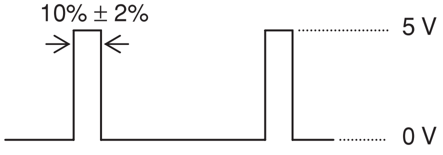
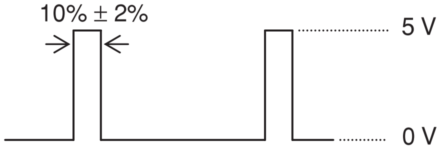
	Adjustment item	Measuring point	Adjusting point	Measuring method and specs.	Remarks
18	PAL demodulation adjustment (PHASE)	TP_LCDB	IC5011 register PHASE (04h)	100% color bar signal (PAL) input Execute step ③ “Method of color adjustment (RB5P0090M)” after entering “PHASE ADJUSTMENT”.	**AVIC-D3/XU/EW5 only** An adjustment with the rise up edge of the FRPV signal being the trigger is recommended. [Effect of deviation from the adjusted value] Color flickering or horizontal stripes are observed during PAL image display.

*) Because step signal of the test disc (GGV1303) is interval in each step is not even, use the step which is near to the designated level referring to "Step signal level table".

Step signal level table

10 step	32 step	White level (%)
10	31	100.0%
	30	96.9%
	29	93.8%
9	28	90.6%
	27	87.5%
	26	84.4%
8	25	81.3%
	24	78.1%
	23	75.0%
7	22	71.9%
	21	68.8%
	20	65.7%
6	19	62.5%
	18	59.4%
	17	56.3%
5	16	53.2%
	15	50.1%
	14	46.9%
4	13	43.8%
	12	40.7%
	11	37.6%
3	10	34.4%
	9	31.3%
	8	28.2%
2	7	25.1%
	6	22.0%
	5	18.8%
1	4	15.7%
	3	12.2%
	2	9.2%
	1	6.2%
0	0	0.0%

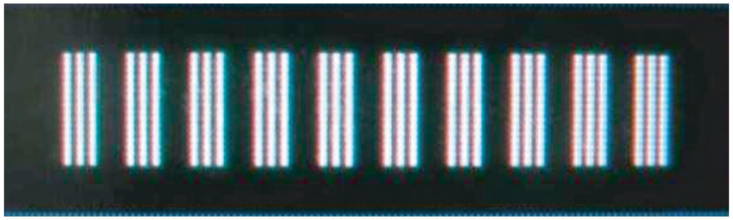
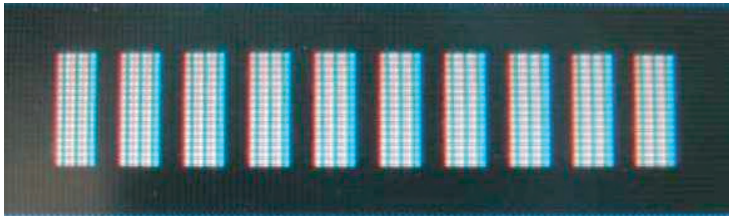
Inverter adjustment

	Adjustment item	Measuring point	Adjusting point	Measuring method and specs.	Remarks
19	Backlight inverter basic driving frequency adjustment	TP_FL1 TP_FL2	VR5900	Set to IC5300 pin44 (INVPUL) = Low.	Connect a cold cathode tube equivalent to CWX3454-A between TP_FL1 and FL2. Measure at the waveform of TP_FL1 output after the voltage division or at TP_FL2. Do not measure TP_FL1 directly. (The measuring equipment may be damaged due to high voltage.)
20	Backlight inverter frequency switching check 1	TP_FL1 TP_FL2		Set to IC5300 pin44 (INVPUL) = High impedance. Input the following waveform of 98.0 kHz ± 1.0 kHz to TP_INVPUL.  The output frequency of TP_FL1/FL2 shall be 49.0 kHz ± 0.5 kHz.	Connect a cold cathode tube equivalent to CWX3454-A between TP_FL1 and FL2. Measure at the waveform of TP_FL1 output after the voltage division or at TP_FL2. Do not measure TP_FL1 directly. (The measuring equipment may be damaged due to high voltage.)
21	Backlight inverter frequency switching check 2	TP_FL1 TP_FL2		Set to IC5300 pin44 (INVPUL) = High impedance. Input the following waveform of 104.0 kH ± 1.0 kHz to TP_INVPUL.  The output frequency of TP_FL1/FL2 shall be 52.0 kHz ± 0.5 kHz.	Connect a cold cathode tube equivalent to CWX3454-A between TP_FL1 and FL2. Measure at the waveform of TP_FL1 output after the voltage division or at TP_FL2. Do not measure TP_FL1 directly. (The measuring equipment may be damaged due to high voltage.)

Flicker adjustment

	Adjustment item	Measuring point	Adjusting point	Measuring method and specs.	Remarks
22	Aging			Input the entire screen white signal (or the moving image). Leave the equipment in the operational state for 30 minutes or more.	
23	Flicker adjustment	Screen	IC5011 register COM DC (15h)	Input a signal for flicker adjustment (RGB 525 line / 60 Hz). Make adjustment in a way that the screen flickering will become minimum.	A signal for flicker adjustment… An image where white 50% and black is displayed alternately for each horizontal scanning line. Please refer to the "6.4 SERVICE ADJUSTMENT".

● Dot clock adjustment

	Adjustment item	Measuring point	Adjusting point	Measuring method and specs.	Remarks
24	Calling out of line adjustment mode			Make the following operation. 1) Reset while pushing the two buttons, [SOURCE] and [←]. (BUP and ACC on while pushing the buttons will also do.) 2) Release the key when “PLEASE PUSH THE [RESET]” is displayed on the screen. 3) Push in the order of [→], [→], [←] and [←]. 4) Make sure that “PLEASE PUSH THE [RESET]” goes away.	If “PLEASE PUSH THE [RESET]” is not displayed in 2), it means a failure of succession. So, repeat from 1). If “PLEASE PUSH THE [RESET]” did not go away in 4), it means a failure of succession. So, repeat from 1).
25	Calling out of Dot clock adjustment mode			Enter the Initial setting menu, and call out the (Dot clock) adjustment screen.	Succession is not possible in the state of parking off.
26	Dot clock adjustment	Test pattern on the screen	Touch key [-], [+], STEP 0~7.	• In case of vertical stripe display The vertical stripes of the test pattern shall be displayed clearly without rolling. OK  NG  Pressing "Back" or "ESC" key, setting value is stored in EEPROM. Then turn off the unit.	

● Color adjustment method (RB5P0090M) (for PAL mode)

Step ① (Fig.1)
1. Input the EIA color bar signal.
2. Monitor the ROUT terminal using an oscilloscope.
3. Adjust the COLOR register value in a way that the average level of white, yellow, magenta and red will be almost the same.

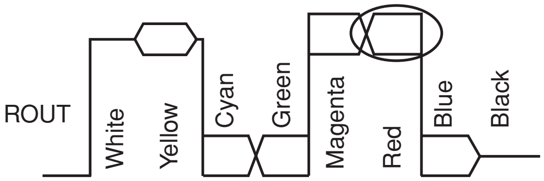
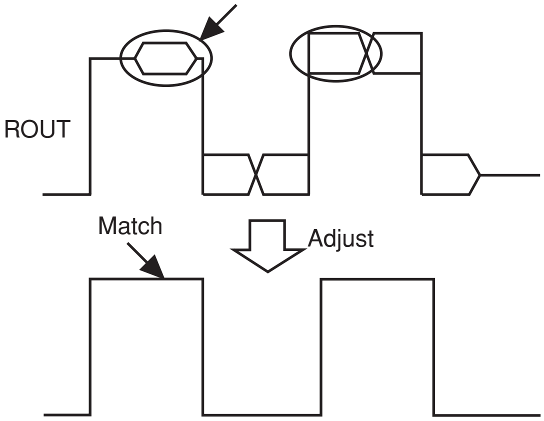


Fig. 1

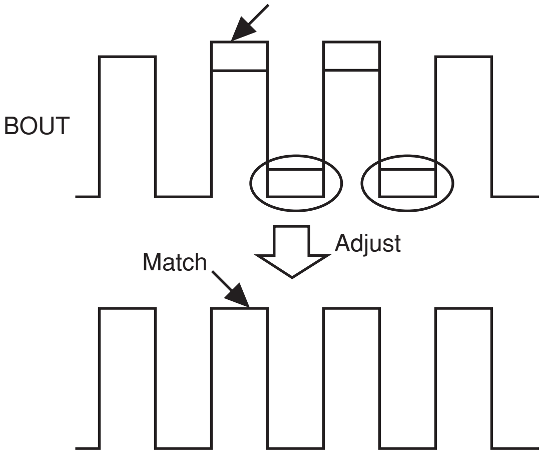
Step ② (Fig.2)
4. Adjust the TINT register value in a way that the level being shifted for each horizontal period will match.



The level differs for each horizontal period.

Fig.2

Step ③ (Fig.3)
5. Next, monitor the BOUT terminal.
6. Adjust the PHASE register value in a way that the shifting of cyan, green and magenta region for each horizontal period will match.



The level differs for each horizontal period.

Fig.3

Reference value after adjustment

COLOR : 90
TINT : 152
PHASE : 40

◯ : The points easier to be used for adjustment

ROUT...TP_LCDR
BOUT...TP_LCDB

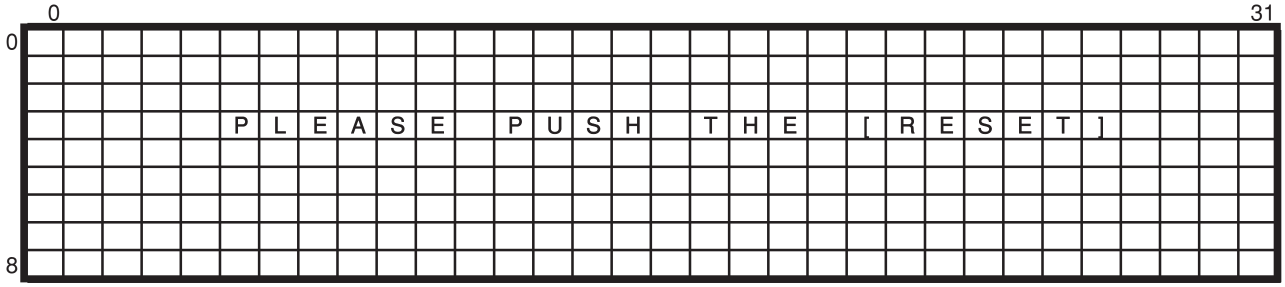
*) Because the result of adjustment will vary depending on the product, the value will not necessarily be close to the “Reference value after adjustment”.

6.4 SERVICE ADJUSTMENT

[Operational specifications]

- After replacing the LCD Module or Monitor Unit, this "SERVICE ADJUSTMENT" must be performed.

- **Method1**
  If the monitor microcomputer is reset by double pressing of the SOURCE key + the [|<<] key, the following screen will be displayed on the OSD.



PLEASE PUSH THE [RESET]

At this time, if the keys are pressed in the order of MENU → |<< → >>| → MAP, the system will proceed to the [Adjustment mode for service].

- **Method2**
  If the monitor microcomputer is reset with the [SRVTEST] terminal set to Low, the system will proceed to the [Adjustment mode for service].
  (You can get the same result by resetting, but it is not recommended as you will lose the user data.)
  *) When the succession is made by the terminal, the OSD display screen below will not be displayed.

- The key operations under this test mode are as follows.

(1): Main body key

Key	Operation	Remarks
|<<	Adjustment value DOWN on the selected item	
>>|	Adjustment value UP on the selected item	

(2): Remote controller key (CXC6317 SW1 : AVH, SW2 : AVH)

Key	Operation	Remarks
←	Adjustment value UP on the selected item	
→	Adjustment value DOWN on the selected item	

- A method to cancel [Adjustment mode for service] is described below.
  ACC OFF → ON. (BUP OFF → ON will do too.)

*) The preset value is first written in the EEPROM, then read out and displayed.
Writing and reading are made in 16 bits. Depending on the setting item, the number of bit may be different.

● Adjustment mode for service

[Picture source preparation]
After entering "Adjustment mode", insert TEST DISC (GGV1303) to the unit and select "11. Horizontal Line1" in the "19. Picture check MENU 2/2".

The specifications of the item adjusted on this page are as follows.

Adjustment item	Adjustment range	Adjustable name	Settings or written data (DEC)
Common inverted output center value	[0 to 255]	COM DC	84
Common inverted output center setting value (FACTORY preset value)	[0 to 255]	FACTORY	84

The actual image of the OSD display screen is as follows.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	S	E	R	V	I	C	E		M	O	D	E																				
1																																
2		C	O	M		D	C										▶		8	4												
3		[	F	A	C	T	O	R	Y	]									8	4												
4																																
5																																
6																																
7																																
8																																

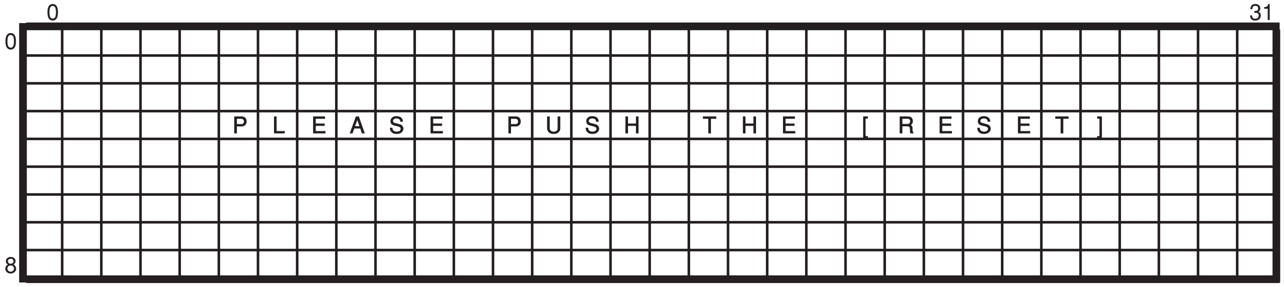
*) The above characters are displayed in black with white rim.
*) "▶" mark indicates the selected item (cursor).
*) There is no CS (check sum) display.

Note 1: The content of [FACTORY] is the default setting value for adjustment for each product adjusted in the line.
(Rewriting can be done in EEPROM adjustment mode only.)

6.5 EEPROM ADJUSTMENT

[Operational specifications]

- **Method1**
  If the monitor microcomputer is reset by double pressing of the SOURCE key + the [|<<] key, the following screen will be displayed on the OSD.



At this time, if the keys are pressed in the order of |<< → MENU → >>| → MAP, the system will proceed to the [Flicker adjustment mode].

- **Method2**
  If the monitor microcomputer is reset while the [EPRTEST] terminal is set to Low, the system will proceed to [Flicker adjustment mode].

(You can get the same result by resetting, but it is not recommended as you will lose the user data.)

*) When the succession is made by the terminal, the OSD display screen below will not be displayed.

- The key operations under this test mode are as follows.

(1): Main body key

Key	Operation	Remarks
SOURCE	Page turning	The screen succeeds in the order of [Flicker adjustment mode] → [Line adjustment mode1] → [Line adjustment mode2] → [Flicker adjustment mode].
MENU	Upward search of selection item	If pressed when the cursor is pointing the top item in a page, the cursor will move to the lowest item.
MAP	Downward search of selection item	If pressed when the cursor is pointing the lowest item in a page, the cursor will move to the top item.
|<<	Adjustment value DOWN on the selected item	
>>|	Adjustment value UP on the selected item	

(2): Remote controller key (CXC6317 SW1 : AVH, SW2 : AVH)

Key	Operation	Remarks
MENU	Page turning	The screen succeeds in the order of [Flicker adjustment mode] → [Line adjustment mode1] → [Line adjustment mode2] → [Flicker adjustment mode].
↑	Upward search of selection item	If pressed when the cursor is pointing the lowest item in a page, the cursor will move to the top item.
↓	Downward search of selection item	If pressed when the cursor is pointing the top item in a page, the cursor will move to the lowest item.
←	Adjustment value UP on the selected item	
→	Adjustment value DOWN on the selected item	

- A method to cancel [E2PROM adjust mode] is described below.
  ACC OFF → ON. (BUP OFF → ON will do too.)

*) The preset value is first written in the EEPROM, then read out and displayed.
Writing and reading are made in 16 bits. Depending on the setting item, the number of bit may be different.

*) When a value subject to CS (check sum) computation is changed, it takes the exclusive (XOR) in 8 bit, and conducts writing.
This CS value, too, is read out after being written into the EEPROM, and that read out value is displayed.

Flicker adjustment mode

The specifications of the item adjusted on this page are as follows.

Adjustment item	Adjustment range	Adjustable name	Settings or written data (DEC)
Common inverted output center value	[0 to 255]	* COM DC	84

"*" is indicated if a value is adjusted regardless of the magnitude.

The actual image of the OSD display screen is as follows.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0																																
1																																
2																																
3																																
4																																
5																																
6	F	L	I	C	K	E	R																									
7																																
8	*	C	O	M		D	C										▶		8	4												

*) The above characters are displayed in black with white rim.
*) "▶" mark indicates the selected item (cursor).

- Note 1: The content of [COM DC] is also reflected to the common inverted output center reference value (Refer to 07-2: EEPROM memory arrangement.xls.).
  (The common inverted output center reference value is treated as the initial value set in the line.)

Line 1 adjustment mode

The specifications of the item adjusted on this page are as follows.

Adjustment item	Adjustment range	Adjustable name	Settings or written data (DEC)
Bright	[0 to 255]	BRIGHT	62
RGB1 contrast	[0 to 255]	CONT-RGB1	168
Black amplitude	[0 to 255]	RGB AMP AJ	232
Output amplitude	[0 to 255]	COM AMP AJ	150
GAMMA 1	[0 to 255]	GAMMA 1	157
GAMMA 2	[0 to 255]	GAMMA 2	116
Sub brightness R	[0 to 255]	SUB BRI R	128
Sub brightness B	[0 to 255]	SUB BRI B	128

The actual image of the OSD display screen is as follows.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0		B	R	I	G	H	T										▶		6	2												
1		C	O	N	T	-	R	G	B	1								1	6	8		N	O	T		E	E	P	R	O	M	
2		R	G	B		A	M	P		A	J							2	3	2												
3		C	O	M		A	M	P		A	J							1	5	0		N	O	T		E	E	P	R	O	M	
4		G	A	M	M	A	1											1	5	7												
5		G	A	M	M	A	2											1	1	6												
6		S	U	B		B	R	I		R								1	2	8												
7		S	U	B		B	R	I		B								1	2	8												
8																										C	S		F	F	F	F

*) The above characters are displayed in black with white rim.
*) "▶" mark indicates the selected item (cursor).
*) CS: Check Sum

- Note 1: The content of [CONT-RGB1] and [COM AMP AJ] are the reference value (adjustable) for adjusting other items, and they are not saved in the EEPROM.
(It is so expressed by displaying “NOT EEPROM” as shown in the above OSD display screen image.)

● Line 2 adjustment mode

The specifications of the item adjusted on this page are as follows.

Adjustment item	Adjustment range	Adjustable name	Settings or written data (DEC)
VIDEO contrast	[0 to 255]	CONT-VIDEO	150
VIDEO color density	[0 to 255]	COLOR	168
VIDEO coloring (NTSC)	[0 to 255]	TINT	100
VIDEO coloring (PAL)	[0 to 255]	PALTINT	150
VIDEO sharpness	[0 to 31]	PICTURE	16
VIDEO PAL demodulation	[0 to 63]	PHASE	42
OSD contrast	[0 to 255]	CONT-RGB2	221
Operational mode	Note 2	INPUT MODE	00000000

The actual image of the OSD display screen is as follows.

(1) When a mode other than the “operational mode” is selected.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0		C	O	N	T	-	V	I	D	E	O						▶	1	5	0		N	O	T		E	E	P	R	O	M	
1		C	O	L	O	R											▶	1	6	8		N	O	T		E	E	P	R	O	M	
2		T	I	N	T													1	0	0		N	O	T		E	E	P	R	O	M	
3		P	A	L	T	I	N	T										1	5	0												
4		P	I	C	T	U	R	E											1	6												
5		P	H	A	S	E													4	2												
6		C	O	N	T	-	R	G	B	2								2	2	1												
7		I	N	P	U	T		M	O	D	E		0	0	0	0	0	0	0	0												
8																										C	S		F	F	F	F

(2) When the “operational mode” is selected.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0		C	O	N	T	-	V	I	D	E	O							1	5	0		N	O	T		E	E	P	R	O	M	
1		C	O	L	O	R												1	6	8		N	O	T		E	E	P	R	O	M	
2		T	I	N	T													1	0	0		N	O	T		E	E	P	R	O	M	
3		P	A	L	T	I	N	T										1	5	0												
4		P	I	C	T	U	R	E											1	6												
5		P	H	A	S	E													4	2												
6		C	O	N	T	-	R	G	B	2								2	2	1												
7		I	N	P	U	T		M	O	D	E		0	0	0	0	0	0	0	0												
8													▲													C	S		F	F	F	F

*) The above characters are displayed in black with white rim.
*) "▶" mark indicates the selected item (cursor).
*) CS: Check Sum

- Note 1: The content of the following items are the reference value (adjustable) for adjusting other items, and they are not saved in the EEPROM.
(It is so expressed by displaying “NOT EEPROM” as shown in the above OSD display screen image.)

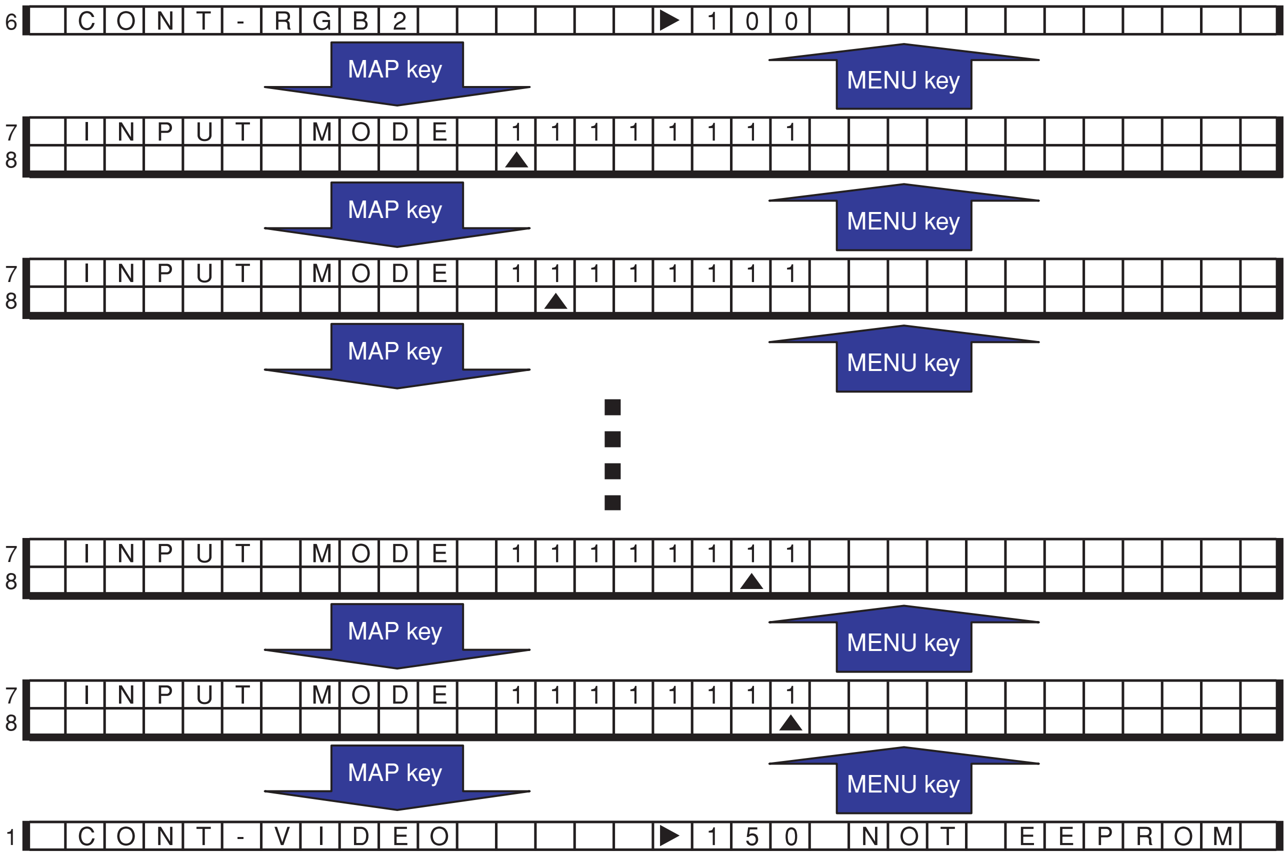
· CONT-VIDEO
· COLOR
· TINT

- Note 2: Adjustment of the operational mode

The precautions for adjustment of the operational mode are as follows.

· Indicated in binary notation, and adjustable by bit only. (no carrying)
· Not subject to CS computation.

While the basic operation is as described in the operational specifications sheet, the cursor movement is made according to the operation/succession shown below.
(The following descriptions are for the cases when the main body keys are operated.)



Memory item list and EEPROM

EEPROM memory alignment chart (S-93C46BD0I-J8)

	ADDRESS	Bit15	Bit14	Bit13	Bit12	Bit11	Bit10	Bit9	Bit8	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Adjustment value of LCD	0	COM DC (0x54)								*1 (0x00)	Don't care (0x00)	PICTURE (0x54)					
	1	Don't care (0x00)								GAMMA 1 (0x9D)							
	2	GAMMA 2 (0x74)								RGB AMPLITUDE (0xE8)							
	3	SUB BRIGHT R (0x80)								SUB BRIGHT B (0x80)							
	4	BRIGHT (0x3E)								CONT RGB 2 (0xDD)							
	5	*2 (0x00)	*3 (0x00)	PHASE (0x2A)						PALTINT (0x96)							
	6	Checksum (LCD)															
Adjustment value of Touch panel	7	Outermost circumference X min (0x2A)								Outermost circumference Y min (0x33)							
	8	Outermost circumference X max (0xF7)								Outermost circumference Y max (0xEE)							
	9	Touch panel X coordinate 1 (0x00)								Touch panel Y coordinate 1 (0x04)							
	A	Touch panel X coordinate 2 (0x00)								Touch panel Y coordinate 2 (0x02)							
	B	Touch panel X coordinate 3 (0xFF)								Touch panel Y coordinate 3 (0x01)							
	C	Touch panel X coordinate 4 (0x00)								Touch panel Y coordinate 4 (0xFF)							
	D	Touch panel X coordinate 5 (0x01)								Touch panel Y coordinate 5 (0xFD)							
	E	Touch panel X coordinate 6 (0x01)								Touch panel Y coordinate 6 (0x00)							
	F	Touch panel X coordinate 7 (0x01)								Touch panel Y coordinate 7 (0x01)							
	10	Touch panel X coordinate 8 (0x01)								Touch panel Y coordinate 8 (0x04)							
	11	Touch panel X coordinate 9 (0x01)								Touch panel Y coordinate 9 (0x05)							
	12	Touch panel X coordinate 10 (0x01)								Touch panel Y coordinate 10 (0x02)							
	13	Touch panel X coordinate 11 (0x01)								Touch panel Y coordinate 11 (0x00)							
	14	Touch panel X coordinate 12 (0x01)								Touch panel Y coordinate 12 (0xFD)							
	15	Touch panel X coordinate 13 (0x02)								Touch panel Y coordinate 13 (0xFD)							
	16	Touch panel X coordinate 14 (0x02)								Touch panel Y coordinate 14 (0x00)							
	17	Touch panel X coordinate 15 (0x02)								Touch panel Y coordinate 15 (0x01)							
	18	Touch panel X coordinate 16 (0x02)								Touch panel Y coordinate 16 (0x04)							
	19	Line touch panel confirmation result (0x00)				Calibration adjustment result (0x00)				Touch panel outermost circumference adjustment result (0x00)							
	1A	Checksum (Touch panel)															
	1B	INPUT MODE (LCD IC) (0x00)								COM DC (Factory value) (0x01)							
Adjustment value of Touch panel (USER)	1C	Outermost circumference X min [USER] (0x00)								Outermost circumference Y min [USER] (0x00)							
	1D	Outermost circumference X max [USER] (0x00)								Outermost circumference Y max [USER] (0x00)							
	1E	Touch panel X coordinate 1 [USER] (0x00)								Touch panel Y coordinate 1 [USER] (0x00)							
	1F	Touch panel X coordinate 2 [USER] (0x00)								Touch panel Y coordinate 2 [USER] (0x00)							
	20	Touch panel X coordinate 3 [USER] (0x00)								Touch panel Y coordinate 3 [USER] (0x00)							
	21	Touch panel X coordinate 4 [USER] (0x00)								Touch panel Y coordinate 4 [USER] (0x00)							
	22	Touch panel X coordinate 5 [USER] (0x00)								Touch panel Y coordinate 5 [USER] (0x00)							
	23	Touch panel X coordinate 6 [USER] (0x00)								Touch panel Y coordinate 6 [USER] (0x00)							
	24	Touch panel X coordinate 7 [USER] (0x00)								Touch panel Y coordinate 7 [USER] (0x00)							
	25	Touch panel X coordinate 8 [USER] (0x00)								Touch panel Y coordinate 8 [USER] (0x00)							
	26	Touch panel X coordinate 9 [USER] (0x00)								Touch panel Y coordinate 9 [USER] (0x00)							
	27	Touch panel X coordinate 10 [USER] (0x00)								Touch panel Y coordinate 10 [USER] (0x00)							
	28	Touch panel X coordinate 11 [USER] (0x00)								Touch panel Y coordinate 11 [USER] (0x00)							
	29	Touch panel X coordinate 12 [USER] (0x00)								Touch panel Y coordinate 12 [USER] (0x00)							
	2A	Touch panel X coordinate 13 [USER] (0x00)								Touch panel Y coordinate 13 [USER] (0x00)							
	2B	Touch panel X coordinate 14 [USER] (0x00)								Touch panel Y coordinate 14 [USER] (0x00)							
	2C	Touch panel X coordinate 15 [USER] (0x00)								Touch panel Y coordinate 15 [USER] (0x00)							
	2D	Touch panel X coordinate 16 [USER] (0x00)								Touch panel Y coordinate 16 [USER] (0x00)							
	2E	Calibration adjustment result [USER] (0x00)								Touch panel outermost circumference adjustment result [USER] (0x00)							

	ADDRESS	Bit15	Bit14	Bit13	Bit12	Bit11	Bit10	Bit9	Bit8	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
RGB user preset	2F	USER1															
		ACT	RED					GREEN					BLUE				
		1	11111					00000					00000				
	30	USER2															
		ACT	RED					GREEN					BLUE				
		1	00000					11111					00000				
	31	USER3															
		ACT	RED					GREEN					BLUE				
		1	00000					00000					11111				
RGB preset	32	PRESET1 (Honda/White)															
		ACT	RED					GREEN					BLUE				
		1	11101					11101					11111				
	33	PRESET2 (Volvo/Light Green)															
		ACT	RED					GREEN					BLUE				
		1	00110					11100					00100				
	34	PRESET3 (Ford/Green)															
		ACT	RED					GREEN					BLUE				
		1	00100					11111					00010				
	35	PRESET4 (VW/Violet)															
		ACT	RED					GREEN					BLUE				
		1	00110					00110					11111				
	36	PRESET5 (Toyota/Blue)															
		ACT	RED					GREEN					BLUE				
		1	00000					00010					11111				
	37	PRESET6 (Nissan/Yellow)															
		ACT	RED					GREEN					BLUE				
		1	11111					11110					00000				
	38	PRESET7 (Peugeot/Orange)															
		ACT	RED					GREEN					BLUE				
		1	11111					00100					00000				
	39	PRESET8 (Audi/Red)															
		ACT	RED					GREEN					BLUE				
		1	11111					00001					00000				
	3A	Reservation 1															
		ACT	RED					GREEN					BLUE				
		0	11111					11111					11111				
	3B	Reservation 2															
		ACT	RED					GREEN					BLUE				
		0	11111					11111					11111				
	3C	Reservation 3															
		ACT	RED					GREEN					BLUE				
		0	11111					11111					11111				
	3D	Reservation 4															
		ACT	RED					GREEN					BLUE				
		0	11111					11111					11111				
	3E	Checksum (RGB Illumination)															
Adjustment of DOTCLK	3F	Don't care (0x00)							*4 (0x00)	Step value when DOTCLK is high temperature (0x00)				Step value when DOTCLK is low temperature (0x00)			

The value of ( ) is different according to the adjustment result of an individual product.

*1 : Flicker adjustment
*2 : PHASE adjustment
*3 : PALTINT adjustment
*4 : DOTCLK adjustment

6.6 PHASE ADJUSTMENT

[Operational specifications]

- If the monitor microcomputer is reset while the [PHTEST] terminal is set to Low, the system will proceed to [PHASE adjustment mode]. (You can get the same result by resetting, but it is not recommended as you will lose the user data.)

- The key operations under this test mode are as follows.

(1): Main body key

Key	Operation	Remarks
MENU	Upward search of selection item	If pressed when the cursor is pointing the top item in a page, the cursor will move to the lowest item.
MAP	Downward search of selection item	If pressed when the cursor is pointing the lowest item in a page, the cursor will move to the top item.
|<<	Adjustment value DOWN on the selected item	
>>|	Adjustment value UP on the selected item	

(2): Remote controller key (CXC6317 SW1 : AVH, SW2 : AVH)

Key	Operation	Remarks
↑	Upward search of selection item	If pressed when the cursor is pointing the lowest item in a page, the cursor will move to the top item.
↓	Downward search of selection item	If pressed when the cursor is pointing the top item in a page, the cursor will move to the lowest item.
←	Adjustment value UP on the selected item	
→	Adjustment value DOWN on the selected item	

- A method to cancel [PHASE adjustment mode] is described below.

ACC OFF → ON. (BUP OFF → ON will do too.)

* The preset value is first written in the EEPROM, then read out and displayed.
Writing and reading are made in 16 bits. Depending on the setting item, the number of bit may be different.

PHASE adjustment mode

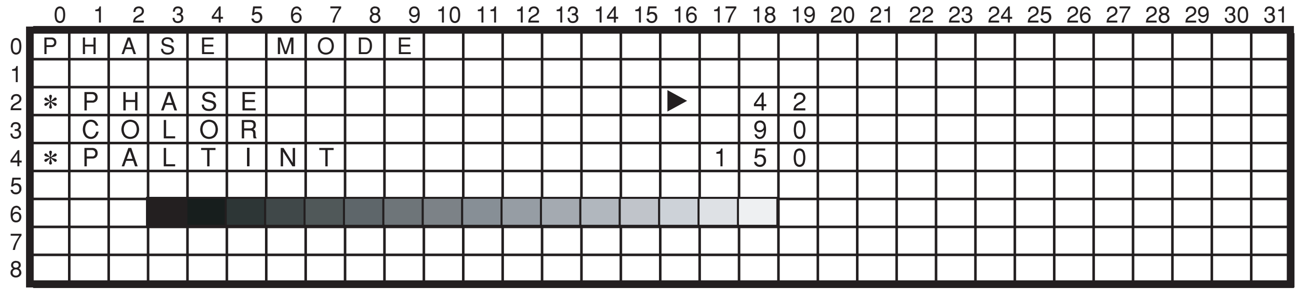
The specifications of the item adjusted on this page are as follows.

Adjustment item	Adjustment range	Adjustable name	Settings or written data (DEC)
VIDEO PAL demodulation	[0 to 63]	* PHASE	42
VIDEO color density	[0 to 255]	COLOR	90
VIDEO coloring (PAL)	[0 to 255]	* PALTINT	150
OSD color total display	—		—

"*" is indicated if a value is adjusted regardless of the magnitude.

"*" is indicated if a value is adjusted regardless of the magnitude.

The actual image of the OSD display screen is as follows.



	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	P	H	A	S	E		M	O	D	E																						
1																																
2	*	P	H	A	S	E											▶		4	2												
3		C	O	L	O	R													9	0												
4	*	P	A	L	T	I	N	T										1	5	0												
5																																
6				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■													
7																																
8																																

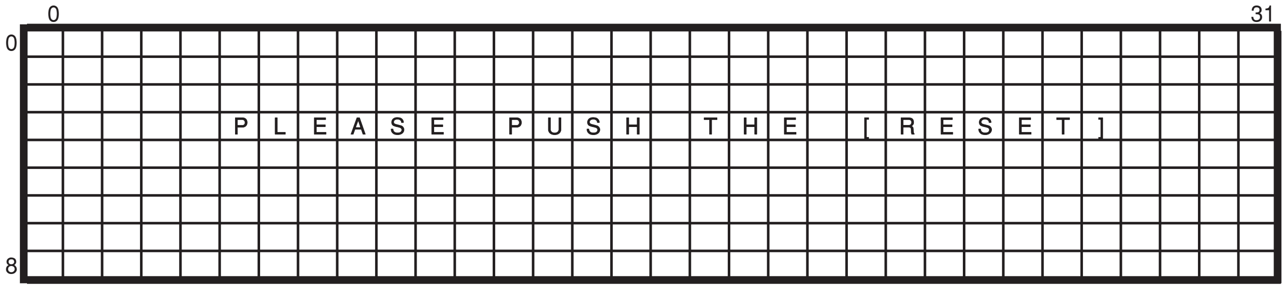
*) The above characters are displayed in black with white rim.
*) "▶" mark indicates the selected item (cursor).
*) There is no CS (check sum) display.

6.7 RGB ILLUMINATION ADJUSTMENT

[Operational specifications]

- **Method1**

If the monitor microcomputer is reset by double pressing of the SOURCE key + the [|<<] key, the following screen will be displayed on the OSD.



PLEASE PUSH THE [RESET]

At this time, if the keys are pressed in the order of SOURCE → >>| → MENU → |<<, the system will proceed to the [RGB illumination test mode].

- **Method2**

If the monitor microcomputer is reset with the [ILMTEST] terminal set to Low, the system will proceed to the [RGB illumination test mode].
(You can get the same result by resetting, but it is not recommended as you will lose the user data.)
*) When the succession is made by the terminal, the OSD display screen below will not be displayed.

- The key operations under this test mode are as follows.

(1): Main body key

Key	Operation	Remarks
SOURCE	Page turning	The screen succeeds in the order of [RGB preset 1 setting mode] → [RGB preset 2 setting mode] → [RGB preset 11 setting mode] → [RGB preset 12 setting mode] → [RGB preset 1 setting mode].
MENU	Upward search of selection item	If pressed when the cursor is pointing the top item in a page, the cursor will move to the lowest item.
MAP	Downward search of selection item	If pressed when the cursor is pointing the lowest item in a page, the cursor will move to the top item.
|<<	Adjustment value DOWN on the selected item	In the case of ON/OFF setting item, set to OFF.
>>|	Adjustment value UP on the selected item	In the case of ON/OFF setting item, set to ON.

(2): Remote controller key (CXC6317 SW1 : AVH, SW2 : AVH)

Key	Operation	Remarks
MENU	Page turning	The screen succeeds in the order of [RGB preset 1 setting mode] → [RGB preset 2 setting mode] → [RGB preset 11 setting mode] → [RGB preset 12 setting mode] → [RGB preset 1 setting mode].
↑	Upward search of selection item	If pressed when the cursor is pointing the lowest item in a page, the cursor will move to the top item.
↓	Downward search of selection item	If pressed when the cursor is pointing the top item in a page, the cursor will move to the lowest item.
←	Adjustment value UP on the selected item	In the case of ON/OFF setting item, set to OFF.
→	Adjustment value DOWN on the selected item	In the case of ON/OFF setting item, set to ON.

- A method to cancel [RGB illumination test mode] is described below.

ACC OFF → ON. (BUP OFF → ON will do too.)

*) The preset value is first written in the EEPROM, then read out and displayed.

● RGB illumination test mode

The specifications of the items adjustable on each preset page are as follows.

Adjustment item	Adjustment range	Adjustable name	Settings or written data (DEC)
Setting of USED/UNUSED	ON/OFF	ACTIVITY	ON
RED adjustment value	[0 to 31]	RED	29
GREEN adjustment value	[0 to 31]	GREEN	29
BLUE adjustment value	[0 to 31]	BLUE	31

The actual image of the OSD display screen is as follows. (Preset 1 display screen is shown as an example.)

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	R	G	B		I	L	M		M	O	D	E																				
1																																
2		P	R	E	S	E	T	_	0	1																						
3																																
4					A	C	T	I	V	I	T	Y					▶	O	N													
5					R	E	D											2	9													
6					G	R	E	E	N									2	9													
7					B	L	U	E										3	1													
8																																

*) The above characters are displayed in black with white rim.
*) "▶" mark indicates the selected item (cursor).
*) The above display screen is common to all preset screens except that the preset number changes.

Note 1: When changed, writing into the E2PROM is done for each preset unit.

Default setting value

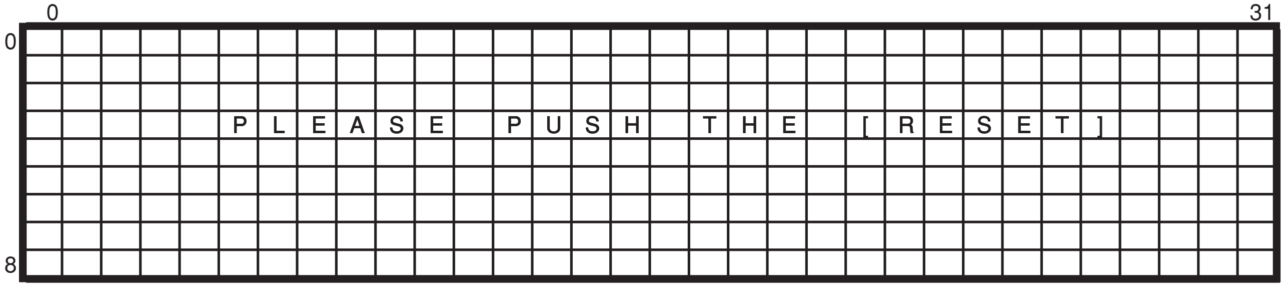
PRESET Number	ACTIVITY	RED	GREEN	BLUE	Remarks
PRESET_01	ON	29	29	31	White
PRESET_02	ON	6	28	4	Light Green
PRESET_03	ON	4	31	2	Green
PRESET_04	ON	6	6	31	Violet
PRESET_05	ON	0	2	31	Blue
PRESET_06	ON	31	30	0	Yellow
PRESET_07	ON	31	4	0	Orange
PRESET_08	ON	31	1	0	Red
PRESET_09	OFF	31	31	31	N/A
PRESET_10	OFF	31	31	31	N/A
PRESET_11	OFF	31	31	31	N/A
PRESET_12	OFF	31	31	31	N/A

6.8 TOUCH PANEL TEST MODE

[Operational specifications]

- After replacing the LCD Module or Monitor Unit.
  "1. TP EFFECTIVE RANGE" and "4. LINE TOUCH PANEL" must be performed.
  If "4. LINE TOUCH PANEL" is failed, "2. CALIBRATION" must be performed.

- **Method1**
  If the monitor microcomputer is reset by double pressing of the SOURCE key + the [|<<] key, the following screen will be displayed on the OSD.



PLEASE PUSH THE [RESET]

At this time, if the keys are pressed in the order of MAP → SOURCE → >>| → MENU, the system will proceed to the [touch panel test mode].

- **Method2**
  If the monitor microcomputer is reset with the [TPTEST] terminal set to Low, the system will proceed to the [touch panel test mode]. (You can get the same result by resetting, but it is not recommended as you will lose the user data.)

*) When the succession is made by the terminal, the OSD display screen below will not be displayed.

- Key Operation

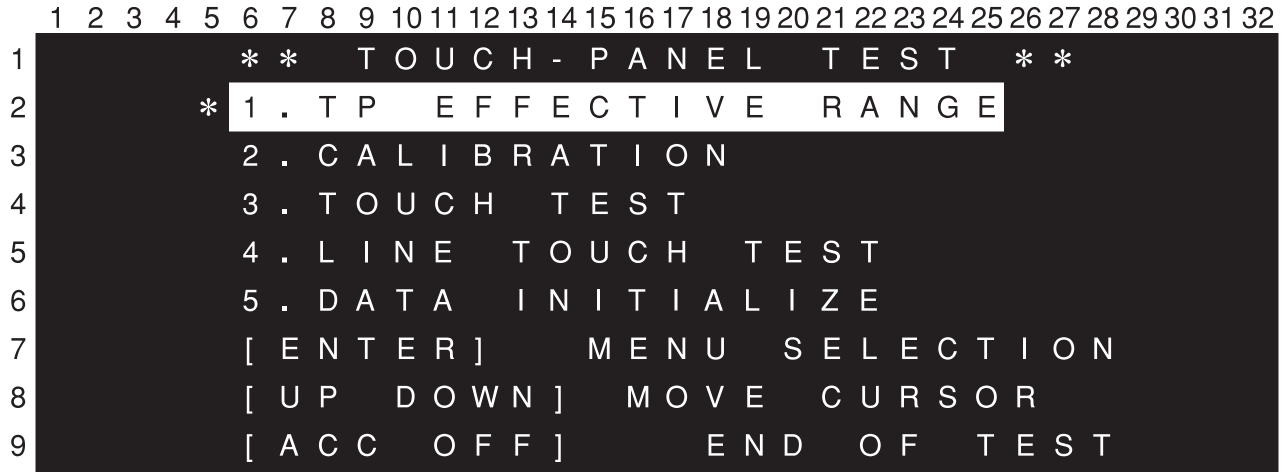
Main body key	Remote controller key	Operation
SOURCE	MENU	Select item
MENU	↑	Upward the cursor
MAP	↓	Downward the cursor

*) Remote controller : CXC6317 (SW1:AVH, SW2: AVH)

MAIN MENU

Screen configuration

Select each item of the touch panel test mode.



1 ** TOUCH-PANEL TEST **

2 *1. TP EFFECTIVE RANGE

3 2. CALIBRATION

4 3. TOUCH TEST

5 4. LINE TOUCH TEST

6 5. DATA INITIALIZE

7 [ENTER] MENU SELECTION

8 [UP DOWN] MOVE CURSOR

9 [ACC OFF] END OF TEST

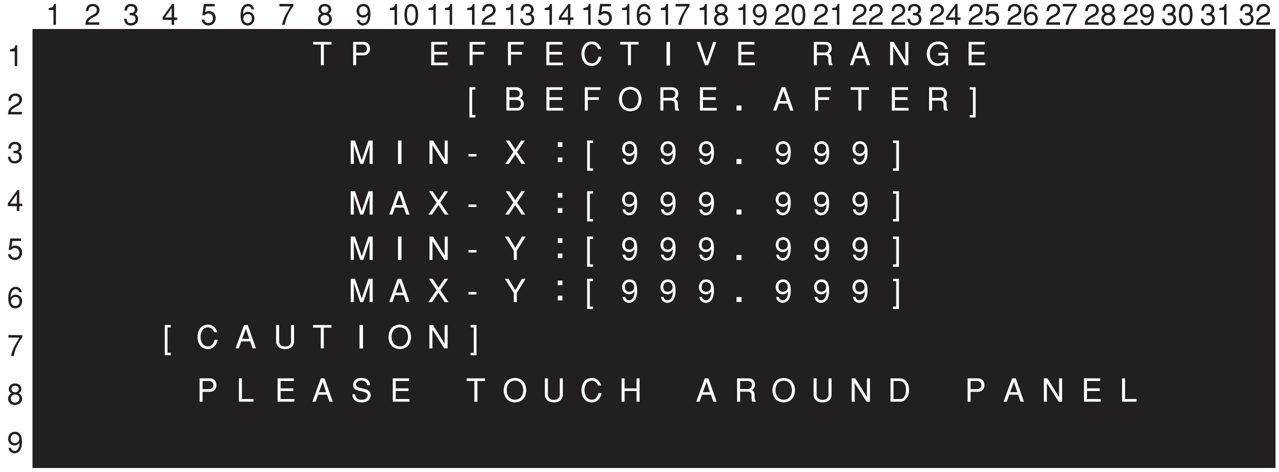
- Conditions for the adjusted mark (*) to light on.
  1. TP EFFECTIVE RANGE
  →When the outermost circumference adjustment has been completed correctly.
  2. CALIBRATION
  →When the calibration has been completed correctly.
  →When the line touch panel test has been completed correctly.
  *) If one of the above conditions is met, the light will turn on.
  4. LINE TOUCH TEST
  →When the line touch panel test has been completed correctly.

- Conditions for the adjusted mark (*) to go out.
  1. TP EFFECTIVE RANGE
  →If the outermost circumference adjustment has never been made.
  →When the EEPROM initialization is made.
  →When the outermost circumference adjustment value initialization is made in the initialization menu.
  →When the outermost circumference adjustment has failed.
  2. CALIBRATION
  →If the calibration adjustment has never been conducted.
  →When the EEPROM initialization is made.
  →When the calibration adjustment value initialization is made in the initialization menu.
  →When the calibration adjustment has failed.
  →When the line touch panel verification has failed.
  4. LINE TOUCH TEST
  →If the line touch panel verification has never been conducted.
  →When the EEPROM initialization is made.
  →When the calibration adjustment value initialization is made in the initialization menu.
  →When the line touch panel verification has failed.

● TP EFFECTIVE RANGE

Screen configuration

Trace the white line displayed on the each four corner of touch panel with a soft stick(ex. wooden toothpick), and the setting values are saved in the EEPROM.



```
TP EFFECTIVE RANGE
[BEFORE.AFTER]
MIN-X:[999.999]
MAX-X:[999.999]
MIN-Y:[999.999]
MAX-Y:[999.999]
[CAUTION]
PLEASE TOUCH AROUND PANEL
```

Operational specifications

Touch on the touch panel, and check the outermost circumference.

OK (NG) is displayed in the screen center by the SOURCE key, and 2 seconds later, the screen will return to the top MENU.

Details of the process

After pressing the SOURCE key, the setting values are judged.

If the value is within the allowable range, the upper limit and the lower limit of the setting value and the normal ending information are saved in the EEPROM and OK is displayed. After 2 seconds, the screen will return to the top MENU.

If the setting value is outside of the range, the upper limit and the lower limit values are not saved in the EEPROM, NG ending information is saved and NG is displayed. After 2 seconds, the screen will return to the top MENU.

The initial values and the setting value allowable range are as shown below.

[The list of AFTER initial value]

Coordinate	Minimum value	Maximum value
X	126	161
Y	126	161

[The list of initial setting value at the time of EEPROM reset]

Coordinate	Minimum value	Maximum value
X	42	247
Y	51	238

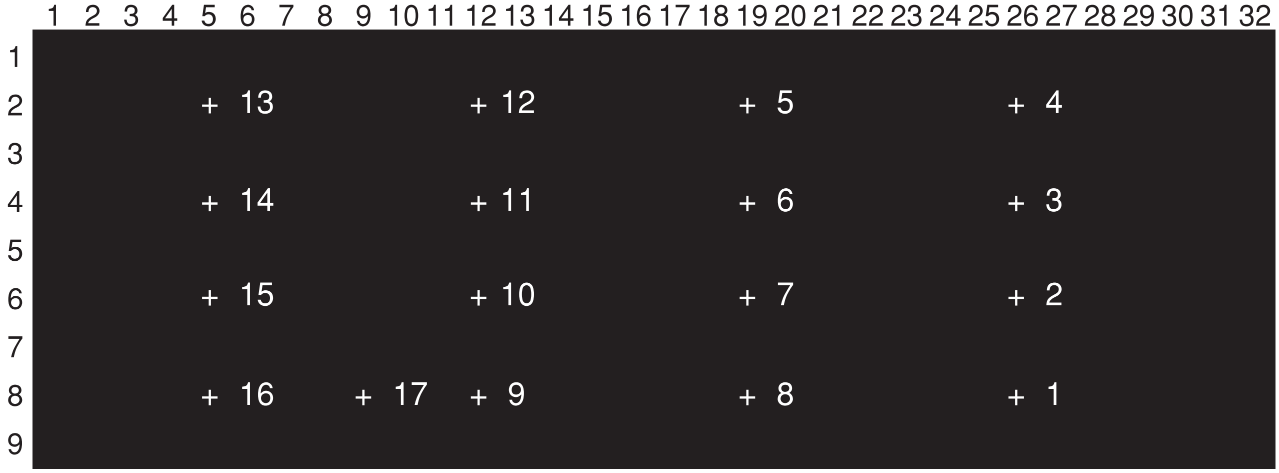
[The list of AFTER setting allowable range]

Coordinate	Minimum value	Maximum value
X	0 to 125	162 to 255
Y	0 to 125	162 to 255

CALIBRATION

Outline

Press “+” cursors on the screen one by one for calibration, and the setting values are saved in the EEPROM.



*) The numbers above indicate the order of the cursors being displayed.

Operational specifications

Press the cursors displayed at 16 locations on the screen one by one for calibration, and the process will be completed by pressing the last cursor (total 17 locations).

After the 17th location has been displayed, “FINISHED” will be displayed in the center of the screen. After 2 seconds, the screen will return to the top MENU.

The cursor is displayed only one at a time, and the next cursor will be displayed when the previous one has been pressed correctly.

If the SOURCE key is pressed before pressing 17 locations, NG will be displayed, and after 2 seconds, the screen will return to the top MENU.

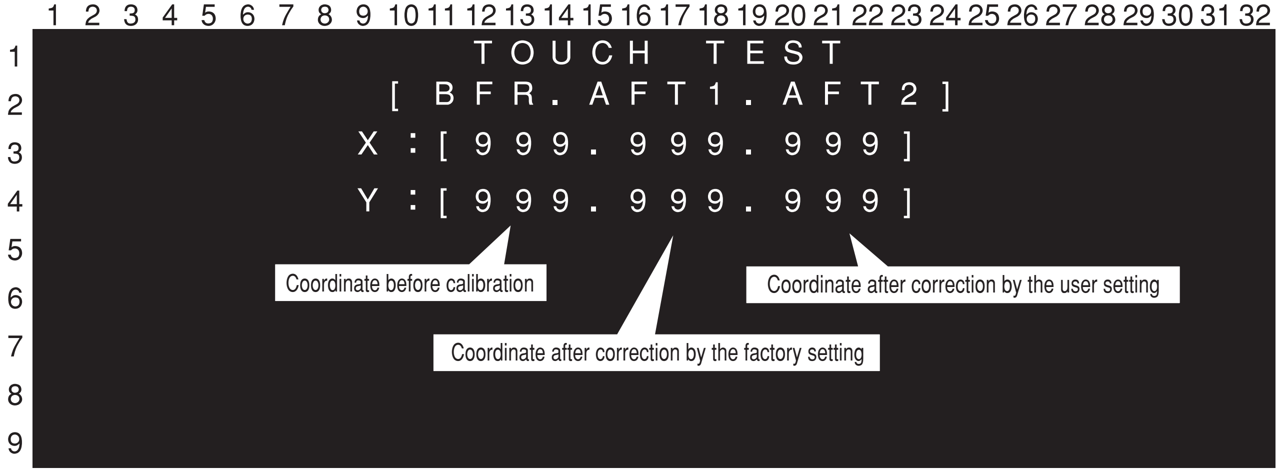
Details of the process

When the 17th location is pressed, the setting values and normal ending information are saved in the EEPROM, and “FINISHED” will be displayed.

If the SOURCE key is pressed during the process and the inspection is finished, the EEPROM will save the NG ending information, and “NG” is displayed.

● TOUCH TEST

Screen configuration
The coordinate before correction and after correction at the time of the touch panel pressing are displayed to verify the operation.

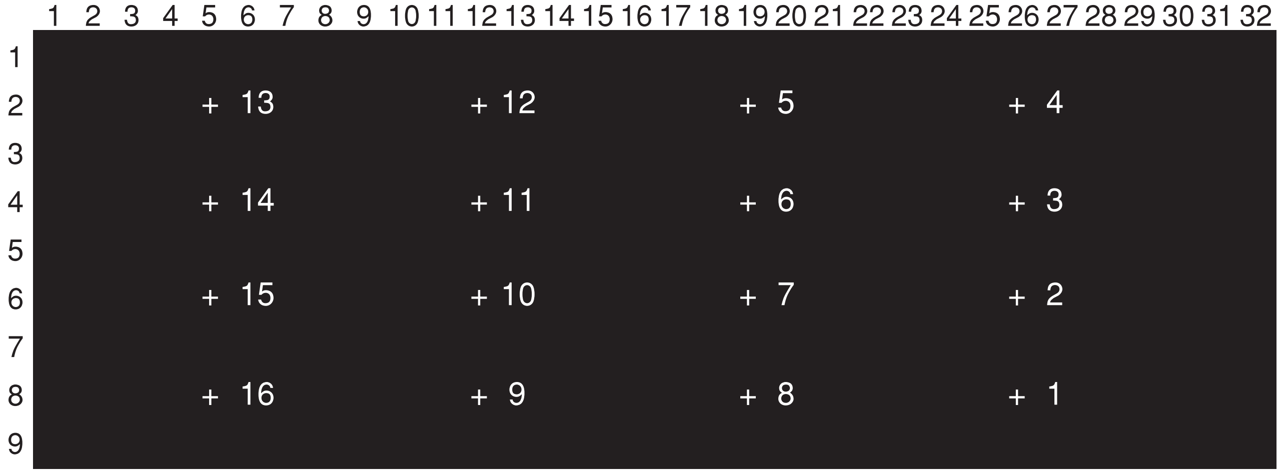

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
1 2 3 4 5 6 7 8 9
Coordinate before calibration
Coordinate after correction by the user setting
Coordinate after correction by the factory setting

```
TOUCH  TEST
[ BFR. AFT1. AFT2 ]
X :[ 999. 999. 999 ]
Y :[ 999. 999. 999 ]
```

Operational specifications
Touch the touch panel to display the coordinate. Verify the coordinate before correction and the coordinate after correction by the factory setting. Return to the top MENU by pressing the SOURCE key.

● LINE TOUCH TEST

Outline
Press the “+” cursors on the screen one by one to judge OK/NG of the touch panel.

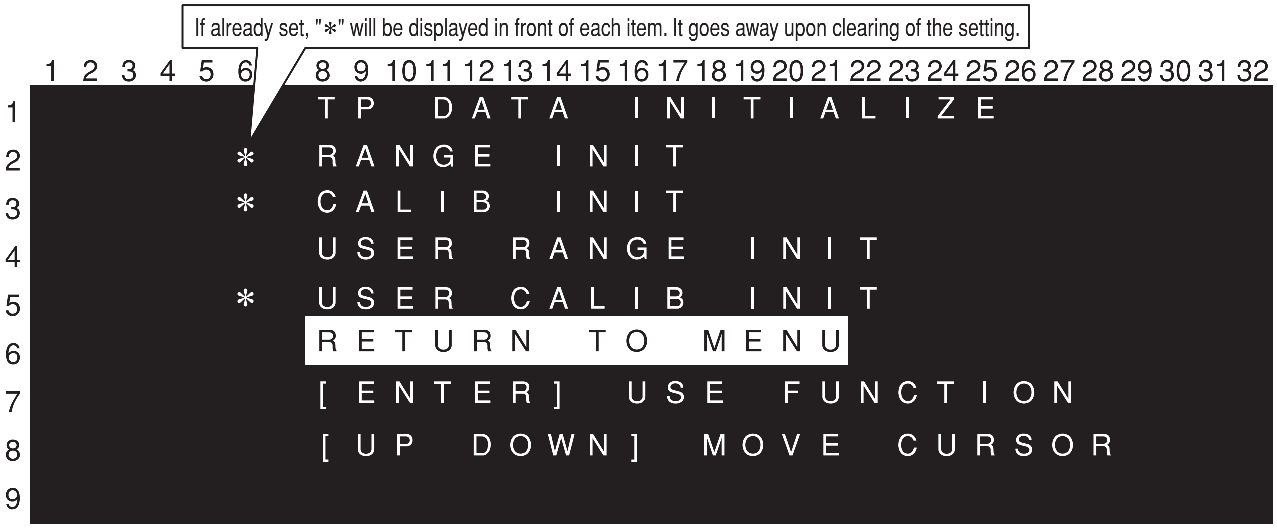


*) The above numbers indicate the order that the cursors are displayed.

Operational specifications
Press the cursors displayed at 16 locations on the screen one by one for inspection.
After the 16th location has been displayed, “OK” will be displayed in the center of the screen. After 2 seconds, the screen will return to the top MENU.
The cursor is displayed only one at a time, and the next cursor will be displayed when the previous one has been pressed correctly.
If not pressed correctly (if not within the OK range), “OUTSIDE OF THE RANGE” will be displayed.
If the SOURCE key is pressed before pressing 16 locations, NG will be displayed, and after 2 seconds, the screen will return to the top MENU.

TP DATA INITIALIZE

Screen configuration
Outermost circumference and 16 point calibration data are returned to the initial value.



If already set, "∗" will be displayed in front of each item. It goes away upon clearing of the setting.

```
  TP DATA INITIALIZE
∗ RANGE INIT
∗ CALIB INIT
  USER RANGE INIT
∗ USER CALIB INIT
  RETURN TO MENU
  [ENTER] USE FUNCTION
  [UP DOWN] MOVE CURSOR
```

The functions by the items selected are as follows.

RANGE INIT	The factory preset outermost circumference setting is initialized.
CALIB INIT	The factory preset calibration is initialized.
USER RANGE INIT	The user preset outermost circumference setting is initialized. By this action, the factory preset outermost circumference setting is used.
USER CALIB INIT	The user preset calibration setting is initialized. By this action, the factory preset outermost circumference setting is used.

- Conditions for the adjusted mark (∗) to light on.

RANGE INIT
→The same condition as the item for outermost circumference adjustment in the top MENU.
CALIB INIT
→The same condition as the item for line touch panel verification in the top MENU.
USER RANGE INIT
→In case the user outermost circumference adjustment made a normal ending.
USER CALIB INIT
→In case the user calibration made a normal ending.

- Conditions for the adjusted mark (∗) to go out.

RANGE INIT
→The same condition as the item for outermost circumference adjustment in the top MENU.
CALIB INIT
→The same condition as the item for line touch panel verification in the top MENU.
USER RANGE INIT
→In case the user outermost circumference adjustment has never been conducted.
→When the EEPROM initialization is made.
→In case the user outermost circumference adjustment value initialization was conducted in the initialization menu.
→In case the outermost circumference adjustment made a normal ending.
→In case the calibration adjustment made a normal ending.
USER CALIB INIT
→In case the user calibration adjustment has never been conducted.
→When the EEPROM initialization is made.
→In case the user calibration adjustment value initialization was conducted in the initialization menu.
→In case the outermost circumference adjustment made a normal ending.
→In case the calibration adjustment made a normal ending.

Operational specifications
Select each item by the MENU key and the MAP key.
The function of the item selected by the SOURCE key is executed.
When “RETURN TO MENU” is executed, the screen will return to the top MENU.

6.9 NAVIGATION TEST MODE

1. Key operation

Use the remote controller for operation. (Part No. : CXC6317 (Operation mode switch : SW1 : AVH, SW2 : DVD))

Basic operation method in the remote controller.
- [↑] (The cursor is moved up) .... [2] key
- [↓] (The cursor is moved down) .... [8] key
- [←] (The cursor is moved left) .... [4] key
- [→] (The cursor is moved right) .... [6] key
- [OK], [ENTER] .... [5] key
- [BACK] .... [C] key
- [NAVI] .... [7] key
- [MENU] .... [0] key

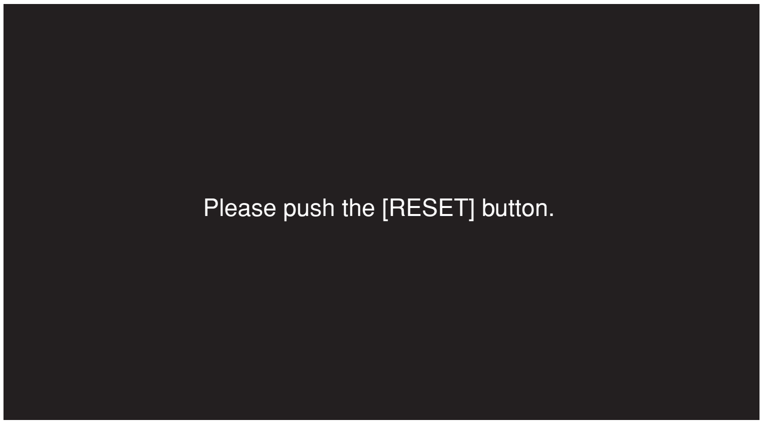
2. How to start the test mode

1. When +Battery and ACC are ON, push RESET and EJECT buttons simultaneously.
2. Release RESET button only.
3. When “password entry screen” is displayed, release EJECT button.
4. Enter the password.
5. When the password has been entered, press [ENTER] key.
6. If the correct password has been entered, the test mode menu will be displayed.

* The password entry screen, as the one used in the previous model, is no longer displayed.

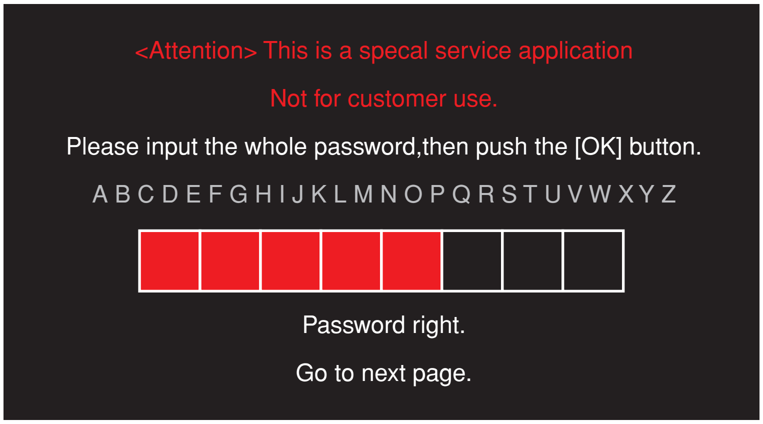
<< Password for the service >>
[8]→[1]→[8]→[3]→[7]→[2]→[0]→[8].
If 8 digits or more are entered and [ENTER] key is pressed, it will be treated as a password error.

- Password entry screen



Please push the [RESET] button.

- Password OK : After 2 seconds or so, the screen will automatically move on to the menu screen.



<Attention> This is a specal service application

Not for customer use.

Please input the whole password,then push the [OK] button.

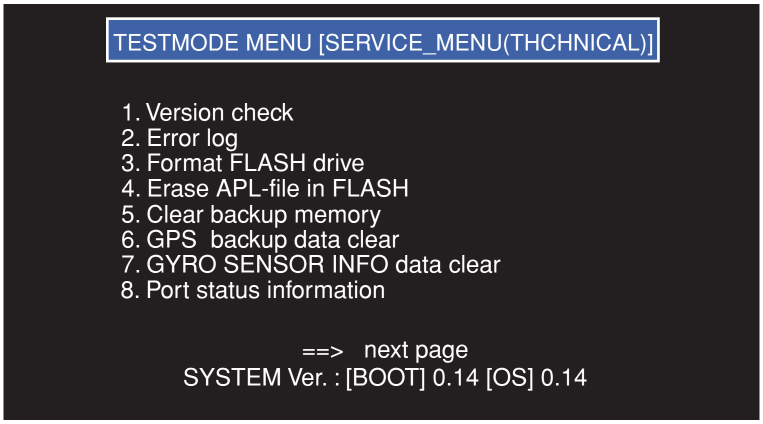
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Password right.

Go to next page.

- Password NG : Nothing will be displayed, and reboot action will be taken.

3. Test mode menu



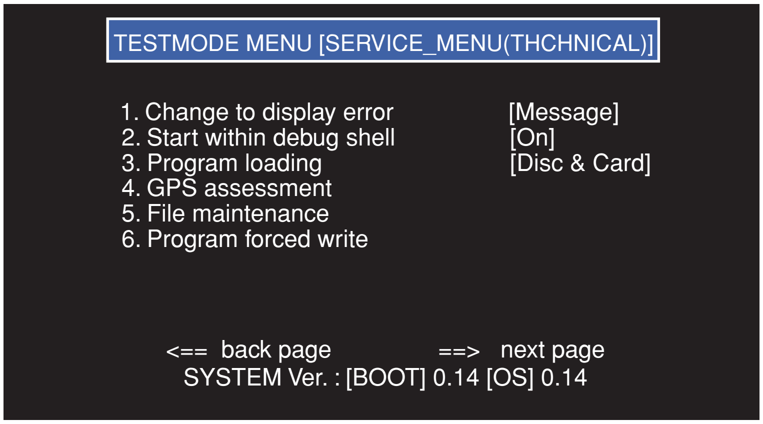
TESTMODE MENU [SERVICE_MENU(THCHNICAL)]

1. Version check
2. Error log
3. Format FLASH drive
4. Erase APL-file in FLASH
5. Clear backup memory
6. GPS backup data clear
7. GYRO SENSOR INFO data clear
8. Port status information

==>   next page

SYSTEM Ver. : [BOOT] 0.14 [OS] 0.14

No.	Inspection item	Outline of inspection	Content if inspection
1	Version check	Version information check	Display of various version information. (system software, GPS, system microprocessor, microprocessor for mechanism control, microprocessor for timer). The screen will return to “menu” by BACK key.
2	ERROR log	Error history entry	History of system software errors stored in SRAM is displayed. Maximum 8 events from the error last occurred can be displayed. The screen will return to “menu” by BACK key.
3	Format FLASH drive	FLASH format	FLASH domain used by the system soft is initialized. When the job is done, the screen will return to “menu”.
4	Erase APL-file in FLASH	Application file inside FLASH is clear	Application file inside FLASH is clear. *(Except voice data and SRAM backup variable) When the job is done, the screen will return to “menu”.
5	Clear backup memory	Back up variables initialization	SRAM domain used by the system software is initialized. When the job is done, reboot action will be taken.
6	GPS backup data clear	GPS back up data clear	SRAM domain used by GPS is initialized. When the job is done, the screen will return to “menu”.
7	GYRO SENSOR INFO data clear	Learned data inside gyro sensor is clear	Learned data inside gyro sensor is cleared. When the job is done, the screen will return to “menu”.
8	Port status information	Port status display	Port status is displayed. (reverse, parking, pulse, SDRAM capacity.)



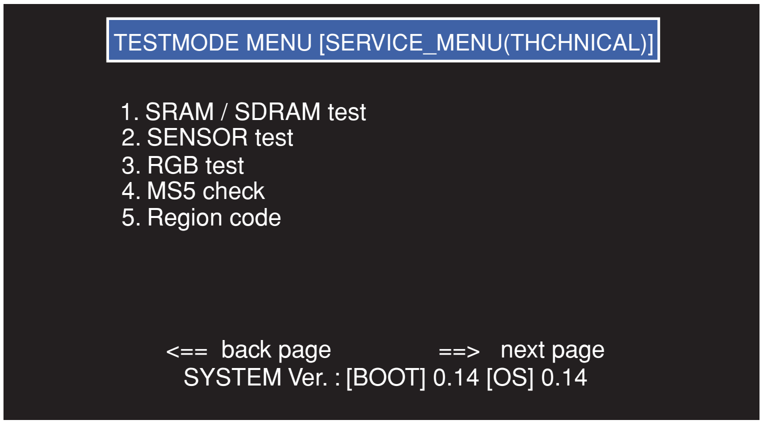
TESTMODE MENU [SERVICE_MENU(THCHNICAL)]

1. Change to display error [Message]
2. Start within debug shell [On]
3. Program loading [Disc & Card]
4. GPS assessment
5. File maintenance
6. Program forced write

<== back page ==> next page

SYSTEM Ver. : [BOOT] 0.14 [OS] 0.14

No.	Inspection item	Outline of inspection	Content if inspection		
1	Change to display error	Switching of error information display	Display setting for error cases. (for debugging) Message/Information (error information) selectable.		
2	Start within debug shell	Switching of debug shell start	Setting for debug shell start. (for debugging) Off (no initial start)/On (initial start) selectable.		
3	Program loading	Switching of program loading	Recognition method for boot up program write is changed.		
			Disc (default)	System program	Write when the version No. in the disc is higher.
				System data	Write when the version No. in the disc is higher.
				GPS program	Write when the version No. in the disc is higher.
				Application program	Write when the version information is different from the one in disc.
			Disc & Card (for debug)	System program	Write when the version No. in disc or card is higher.
				System data	Write when the version No. in disc or card is higher.
				GPS program	Write when the version No. in disc or card is higher.
				Application program	Write when the version No. in disc or card is higher.
4	GPS assessment	GPS assessment system start	GPS assessment system can be used. The system will return to “menu” by BACK key.		
5	File maintenance	File maintenance function	File maintenance operations are made. Formatting of SRAM drive and PC card (ATA Flash Card) are made. SRAM data is retrieved and copied to PC card. Data retrieved from SRAM is copied to SRAM from PC card.		
6	Program forced write	Program forced write	Rewriting of SYS (system), GPS (GPS) and APL (application) software are done by force. (Joystick is used) The system will return to “menu” by BACK key.		



TESTMODE MENU [SERVICE_MENU(THCHNICAL)]

1. SRAM / SDRAM test
2. SENSOR test
3. RGB test
4. MS5 check
5. Region code

<== back page ==> next page
SYSTEM Ver. : [BOOT] 0.14 [OS] 0.14

No.	Inspection item	Outline of inspection	Content if inspection
1	SRAM/SDRAM test	Memory inspection	SRAM : Device inspection and bus inspection are performed against all SRAM domains. Data will be protected. (applicable to both 32M and 64M) SDRAM : Device inspection and bus inspection are performed against all SDRAM domains. Data will be protected for both BIOS domain and USER domain. The function for SDRAM all domain inspection will activate by the built-in instruction RAM.
2	SENSOR test	Sensor inspection	G sensor, gyro, power supply voltage and installation condition are displayed. The system will return to “menu” by BACK key.
3	RGB test	Image RGB inspection	RGB inspection (Upper half, 8 colors. Black/blue/red/pink/green/light blue/yellow/white display. Lower half, 3 colors. Red/green/blue.) → red (FULL) → green (FULL) → blue (FULL) Switching can be made by [←] and [→] keys. The system will return to “menu” by BACK key.
4	MS5 check	MS5 check	MS5 mechanism test mode inspection.
5	Region code	Region code display	Region code display.

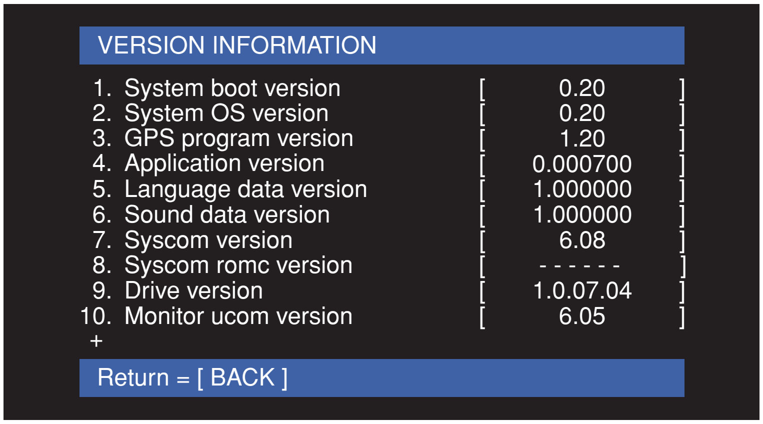
4. How to select test mode menu

Select a desired menu by [↑] and [↓] keys, and execute by pressing [ENTER] key.
Pages can be changed by [←] and [→] keys.

5. Version information

Version No. for BOOT section = X.XX System software does not exist in SDRAM.
Version No. for BOOT section = X.XX Version No. for SDRAM = Y.YY

Version check



VERSION INFORMATION

1. System boot version [0.20]
2. System OS version [0.20]
3. GPS program version [1.20]
4. Application version [0.000700]
5. Language data version [1.000000]
6. Sound data version [1.000000]
7. Syscom version [6.08]
8. Syscom romc version [- - - - - -]
9. Drive version [1.0.07.04]
10. Monitor ucom version [6.05]

+

Return = [BACK]

	Item	Content	Information display	File name
1	System boot version	The version information of the system software boot section (FLASH) is displayed.	[**.**]→The version information of the system software boot section.	EW070BOT.PRG UC070BOT.PRG
2	System OS version	The version information of the system software OS section (FLASH) is displayed.	[**.**]→The version information of the system software OS section. [NG]→There is no system program.	EW070SYS.PRG UC070SYS.PRG
3	GPS program version	The version information of the GPS program (DRAGON) is displayed.	[**.**]→The version information of the GPS program. [NG]→There is no GPS program.	EW070GPS.PRG UC070GPS.PRG
4	Application version	The version information of the application program (FLASH) is displayed.	[**.**]→The version information of the application program. [NG]→There is no application program.	EU070APL.PRG
5	Language data version	The version information of the data by language (FLASH) is displayed.	[**.**]→The version information of the data by language. [NG]→There is no data by language.	EW070DAT.xxx (xxx: Extension is determined for each language. GBR, DEU, FRA, ITA, NLD, ESP, SWE, DNK.) UC070DAT.yyy (yyy: Extension is determined for each language. USA, FRA, ESP.)
6	Sound data version	The version information of the sound data by language (FLASH) is displayed.	[**.**]→The version information of the sound data by language. [NG]→There is no sound data by language.	EW070SDF.xxx (xxx: Extension is determined for each language. GBR, DEU, FRA, ITA, NLD, ESP, SWE, DNK BEL.) UC070SDF.yyy (yyy: Extension is determined for each language. USA, FRA, ESP.)
7	Syscom version	The version information of the system microcomputer is displayed.	[**.**]→The version information of the system microcomputer. [NG]→The communication with the system microcomputer is not established.	
8	Syscom romc version	The ROM Correction version information of the system microcomputer is displayed.	[**.**]→The ROM Correction version information of the system microcomputer. [-----]→There is no ROM Correction attached.	
9	Drive version	The core version information of the mechanism microcomputer is displayed.	[**.**]→The core version information of the mechanism microcomputer. [NG]→The communication with the mechanism microcomputer is not established. [-----]→The region of the mechanism is different.	
10	Monitor ucom version	The version information of the monitor microcomputer is displayed.	[**.**]→ The version information of the monitor microcomputer. [NG]→The communication with the monitor microcomputer is not established.	
11	Monitor ucom romc version	The ROM Correction version information of the monitor microcomputer is displayed.	[**.**]→The ROM Correction version information of the monitor microcomputer. [------]→There is no ROM Correction attached.	
12	System program	The system software file is displayed.	[EW070SYS.PRG]→System software file for EW. [UC070SYS.PRG]→ System software file for UC. [NG]→There is no system software file.	
13	Application language	The data file by language is displayed.	[EW070DAT.xxx]→Data file by language for EW. [UC070DAT.yyy]→Data file by language for UC. [NG]→There is no data by language.	EW070DAT.xxx (xxx: Extension is determined for each language. GBR, DEU, FRA, ITA, NLD, ESP, SWE, DNK.) UC070DAT.yyy (yyy: Extension is determined for each language. USA, FRA, ESP.)
14	Sound data language	The sound data file by language is displayed	[EW070SDF.xxx]→Sound data file by language for EW. [UC070SDF.yyy]→Sound data file by language for UC. [NG]→There is no sound data by language.	EW070SDF.xxx (xxx: Extension is determined for each language. GBR, DEU, FRA, ITA, NLD, ESP, SWE, DNK. BEL) UC070SDF.yyy (yyy: Extension is determined for each language. USA, FRA, ESP.)

● Error Information

1. Error Information

Descriptions of error information, for errors arising from system software problems, will be provided in this section.

Up to eight sets of information, related to the system software's errors, will be stored in the SRAM.

By executing hi_sysdwn( ) the line number (on which the error occurred), the error code and detailed information of the error, will be stored in the error log.

Hi_sysdwn( ) will be executed in the following two circumstances:

1. hi_sysdwn( ) will be intentionally stored if fatal errors occur with each BIOS.
2. If multiple exceptions, fatal exceptions, illegal command codes and trap command errors occur.
3. Reset activated by the Watch Dog Timer function. This occurs when the program ceases to function properly.

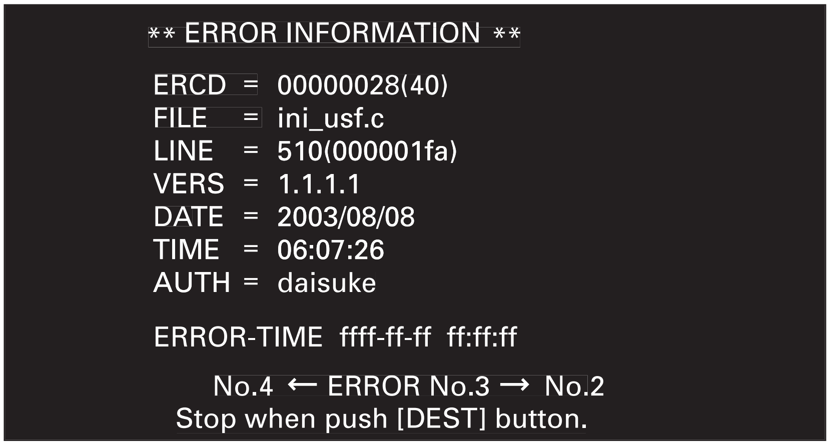
2. Error Log's Entry Function

Up to twenty-four sets of information, related to errors starting with the latest error, will be displayed by the error log entry function.

There are two types of error log displays.

The display will vary when the argument provided to hi_sysdwn( ), depending on whether detailed information (such as program name, version number, creation date, creation time and creator name) exists or not.

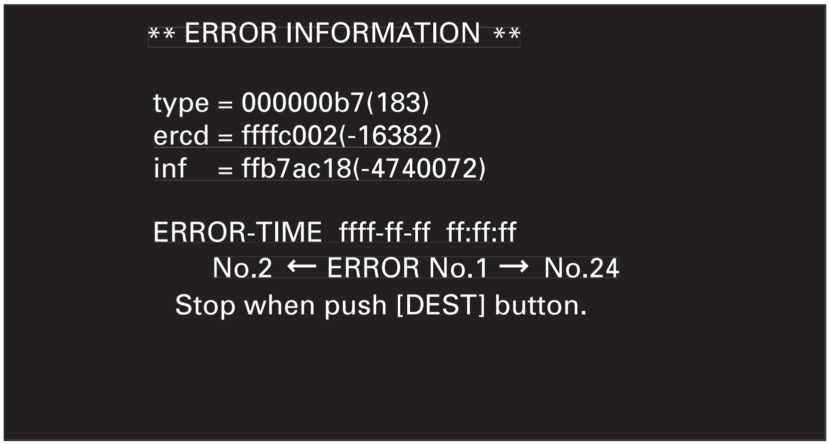
1. When detailed information exists:



```
** ERROR INFORMATION **

ERCD  =  00000028(40)
FILE  =  ini_usf.c
LINE  =  510(000001fa)
VERS  =  1.1.1.1
DATE  =  2003/08/08
TIME  =  06:07:26
AUTH  =  daisuke

ERROR-TIME  ffff-ff-ff  ff:ff:ff

     No.4 ← ERROR No.3 → No.2
   Stop when push [DEST] button.
```

ERCD	Error Code (If the FILE column is "int_wdt.c", ID of the task in operation is displayed when the last 4 digits are reset)
FILE	Name of the program where the error occurred (In case of "int_wdt.c", it shows that reset is activated by the Watch Dog Timer. In this case, ERCD shows other information than error information).
LINE	Program line number where the error occurred
VERS	Version number of the program where the error occurred
DATE	Date of creation of the program where the error occurred
TIME	Time of creation of the program where the error occurred
AUTH	Creator of the program where the error occurred
ERROR - TIME	Time of error occurrence

2. When detailed information does not exist:



```
** ERROR INFORMATION **

type = 000000b7(183)
ercd = ffffc002(-16382)
inf   = ffb7ac18(-4740072)

ERROR-TIME  ffff-ff-ff  ff:ff:ff
     No.2 ← ERROR No.1 → No.24
  Stop when push [DEST] button.
```

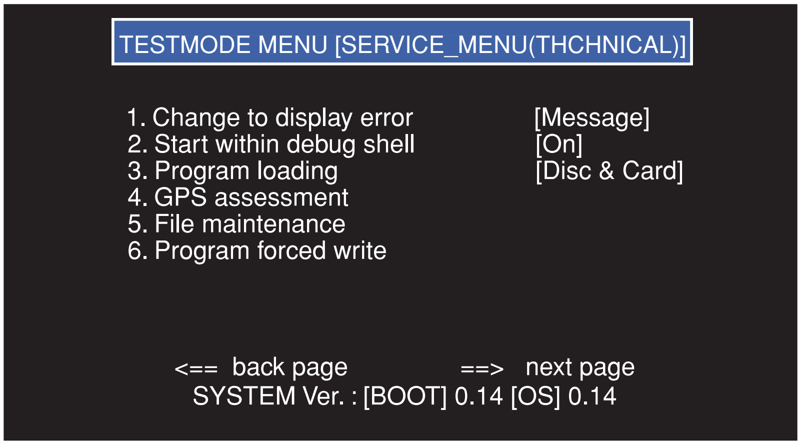
type	Error occurring program line number.
ercd	Error code.
inf	System down information.
ERROR-TIME	Error occurrence date and time.

3. Error Information Switch

The product (with default settings) will display error messages to the user if an error occurs.
Error information can be displayed if an error occurs by switching the error information in the test mode.
In either case, the error log entry display will be the same.

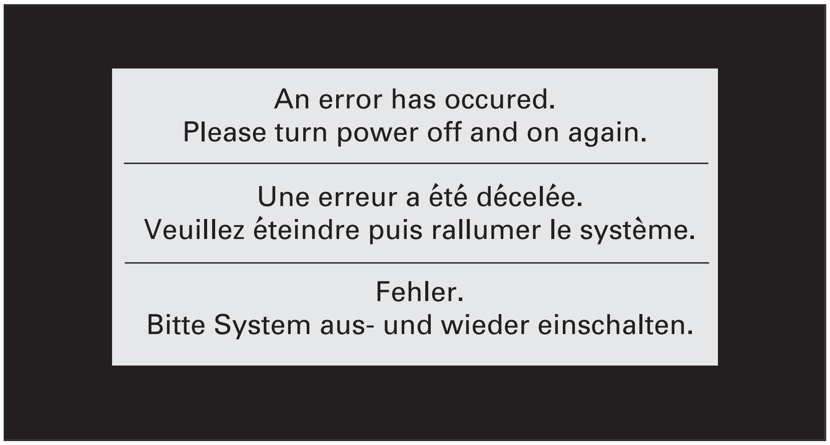
1) Error message display (default settings):

- Setting in the test mode:



```
TESTMODE MENU [SERVICE_MENU(THCHNICAL)]

1. Change to display error          [Message]
2. Start within debug shell         [On]
3. Program loading                  [Disc & Card]
4. GPS assessment
5. File maintenance
6. Program forced write


   <==  back page             ==>   next page
   SYSTEM Ver. : [BOOT] 0.14 [OS] 0.14
```

- Display when an error occurs:



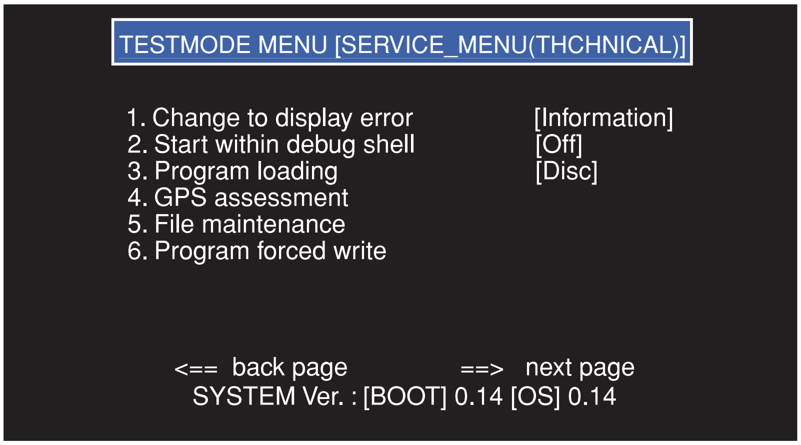
An error has occured.
Please turn power off and on again.

Une erreur a été décelée.
Veuillez éteindre puis rallumer le système.

Fehler.
Bitte System aus- und wieder einschalten.

2) Error information display

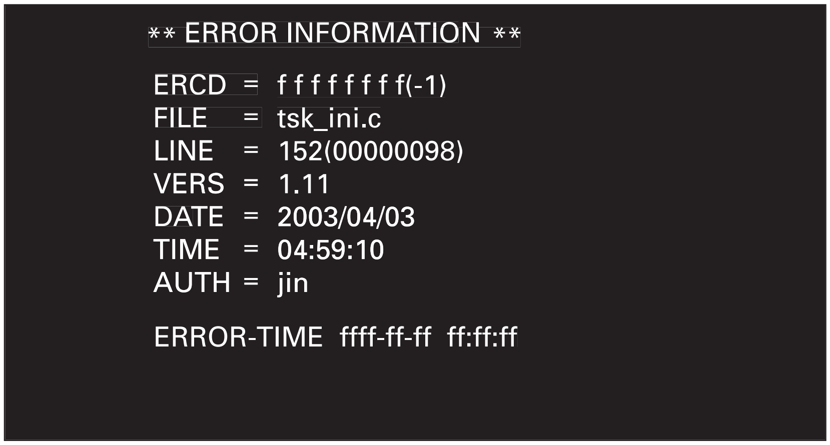
- Settings in the test mode:



```
TESTMODE MENU [SERVICE_MENU(THCHNICAL)]

1. Change to display error           [Information]
2. Start within debug shell          [Off]
3. Program loading                   [Disc]
4. GPS assessment
5. File maintenance
6. Program forced write

     <==  back page          ==>   next page
      SYSTEM Ver. : [BOOT] 0.14 [OS] 0.14
```

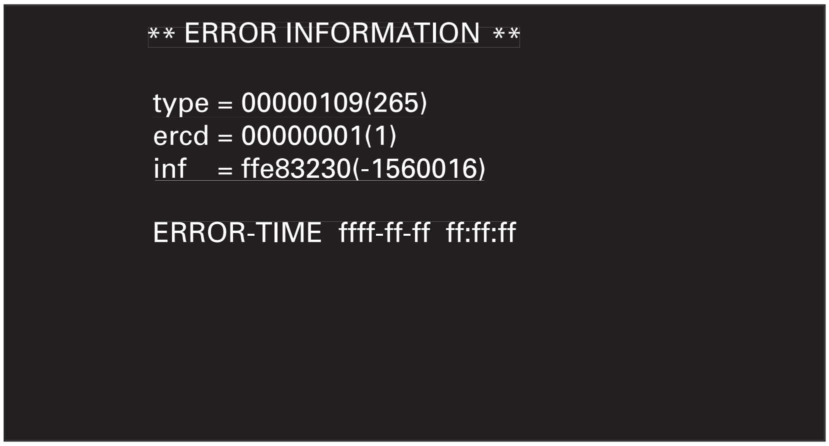
Display when an error occurs:

- If error information exists:



```
** ERROR INFORMATION **

ERCD  =  f f f f f f f f(-1)
FILE  =  tsk_ini.c
LINE  =  152(00000098)
VERS  =  1.11
DATE  =  2003/04/03
TIME  =  04:59:10
AUTH  =  jin

ERROR-TIME  ffff-ff-ff  ff:ff:ff
```

- If error information does not exist:



```
** ERROR INFORMATION **

type = 00000109(265)
ercd = 00000001(1)
inf    = ffe83230(-1560016)

ERROR-TIME  ffff-ff-ff  ff:ff:ff
```

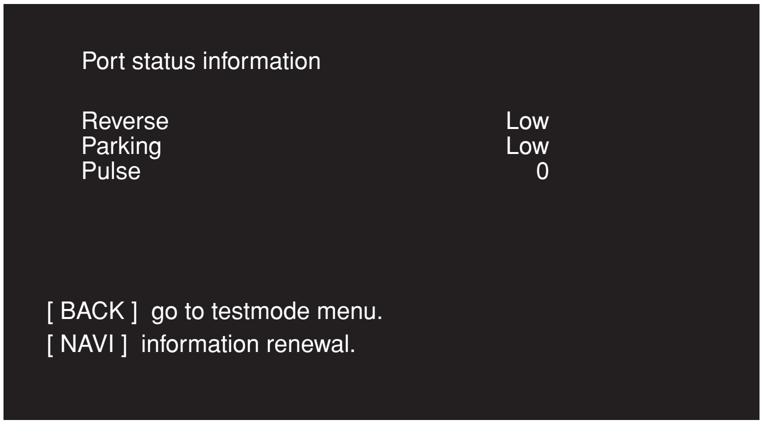
4. Watch dog timer

This product has a built-in mechanism to monitor at a certain interval whether the software is correctly operating or not.

Once this mechanism becomes inoperable, “reset request” will be sent to the power supply microprocessor when a preset time (approximately 4 seconds) has elapsed.

In order to record operational situation of such an occasion, a special code which is not an error code is recorded in the ERCD.

Port status information



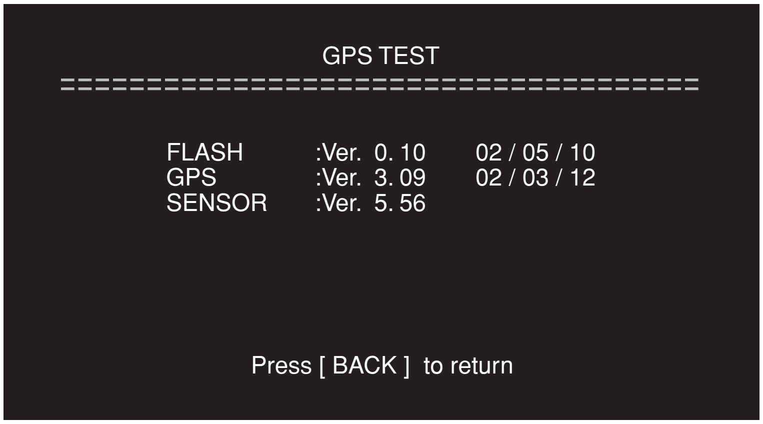
```
Port status information

Reverse                          Low
Parking                          Low
Pulse                              0



[ BACK ]  go to testmode menu.
[ NAVI ]  information renewal.
```

Display	Content of inspection
Reverse	Reverse port status
Parking	Parking port status
Pulse	Pulse status

The pulse number of vehicle speed is indicated at 1/5 value of input frequency for vehicle speed signal.
For example, when vehicle speed signal is 100Hz, the value becomes 20.

How to operate.
[BACK] : Return to the test mode menu.
[NAVI] : Update of the port status.

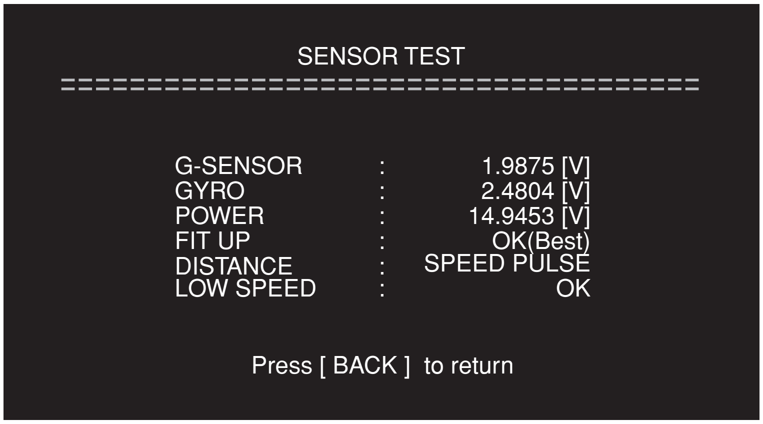
GPS assessment



```
                    GPS TEST
==========================================

       FLASH      :Ver.  0. 10    02 / 05 / 10
       GPS        :Ver.  3. 09    02 / 03 / 12
       SENSOR     :Ver.  5. 56



              Press [ BACK ]  to return
```

FLASH	Display of DRAGON FLASH ROM version information.
GPS	Display of GPS version information.
SENSOR	Display of sensor version information.

SENSOR test



```
SENSOR TEST
========================================


G-SENSOR     :        1.9875 [V]
GYRO         :        2.4804 [V]
POWER        :       14.9453 [V]
FIT UP       :         OK(Best)
DISTANCE     :      SPEED PULSE
LOW SPEED    :               OK


Press [ BACK ]  to return
```

G-SENSOR	Display of G sensor voltage		
GYRO	Display of gyro voltage		
POWER	Display of power supply voltage		
FIT UP	Display of installation status		
	Display	Status	
	• NG	Installation position is NG.	
	• OK	Installation position is OK. (3rd best)	
	• OK (Better)	Installation position is OK. (2nd best)	
	• OK (Best)	Installation position is OK. (Best)	
DISTANCE	Display of distance calculation status.		
	Display	Status	
	• INITIALIZE	Sensor initial learning is under way.	
	• GPS	GPS distance. (Model without G sensor. No pulse connection.)	
	• G-SENSOR	G sensor distance. (simple hybrid.)	
	• ND-PG1	ND-PG1 distance.	
	• SPEED PULSE	Vehicle speed pulse distance.	
LOW SPEED	Display of minimum output speed of a low speed NG vehicle. (Depends on DISTANCE status.)		
	DISTANCE status	SPEED PULSE status	Display
	SPEED PULSE	Low vehicle speed pulse learning is under way.	CHECK
		Low vehicle speed pulse is OK.	OK
		Low vehicle speed is NG.	NG xx[km/h]
	Others		- - - - -

● MS5 check (DVD Mechanism Module test mode)

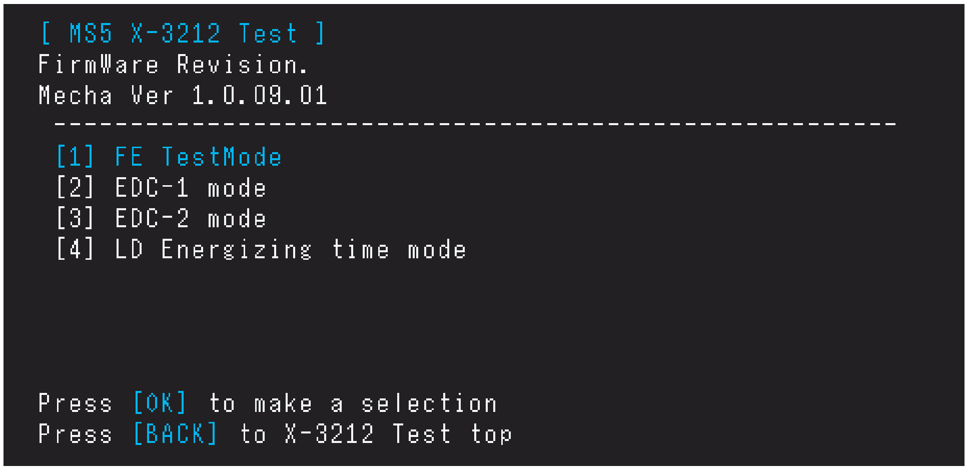
*) Caution

During the servo test, the protection against runaway of the mechanism will not be effective. If the runaway state is left as it is, it may cause a critical damage. When a strange sound is heard during test, turn the power OFF immediately.

The keys used

[OK]	decision key
[BACK]	return key
[Direction key]	up, down, left and right of the joystick

[MS5 X-3212 Test] Initial screen of the test mode



```
[ MS5 X-3212 Test ]
FirmWare Revision.
Mecha Ver 1.0.09.01
 -------------------------------------------------------
  [1] FE TestMode
  [2] EDC-1 mode
  [3] EDC-2 mode
  [4] LD Energizing time mode




Press [OK] to make a selection
Press [BACK] to X-3212 Test top
```

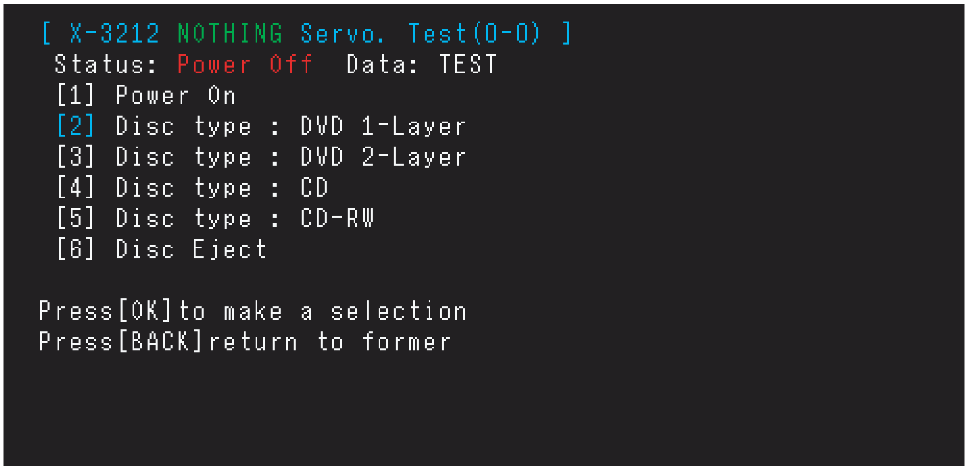
Mecha Ver: Software version of the MS5 mechanism.

[1]	Start of FE test
[2]	Start of EDC-1 test
[3]	Start of EDC-2 test
[4]	Start of LD energizing time mode
[OK]	Execute
[BACK]	Exit from X-3212 test mode

FE test operational specifications

*) Caution
During the servo test, the protection against runaway of the mechanism will not be effective. If the runaway state is left as it is, it may cause a critical damage. When a strange sound is heard during test, turn the power OFF immediately.
When E is displayed at the head digit of the data, operation other than [BACK] is not possible.

1. [X-3212 Servo Test]: The screen in the power off state.



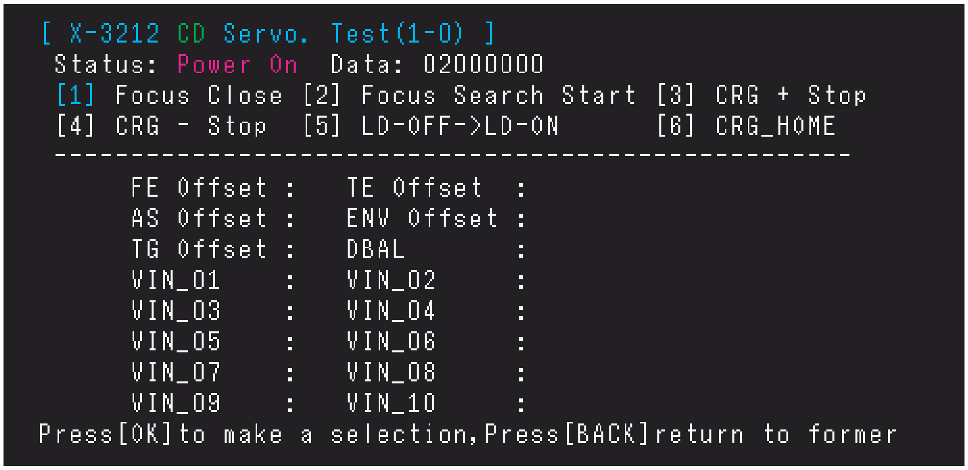
```
[ X-3212 NOTHING Servo. Test(0-0) ]
 Status: Power Off  Data: TEST
 [1] Power On
 [2] Disc type : DVD 1-Layer
 [3] Disc type : DVD 2-Layer
 [4] Disc type : CD
 [5] Disc type : CD-RW
 [6] Disc Eject

Press[OK]to make a selection
Press[BACK]return to former
```

- NOTHING is changed by selecting [2] to [5] below.
- Each display is changed to the compatible media type.
- Status is unchanged at Power Off.
- The value of the data changes according to the executed command.

Note) [1] cannot be selected for execution unless one of the commands among [2] to [5] is executed once.

[1]	Succeeds to Power On state.
[2]	Specify DVD layer 1
[3]	Specify DVD layer 2
[4]	Specify CD
[5]	Specify CD-RW
[6]	Eject Disc
[OK]	Execute
[BACK]	Exit from X-3212 test mode

2. [X-3121 Servo Test(1-0)]: The screen in the power on state.

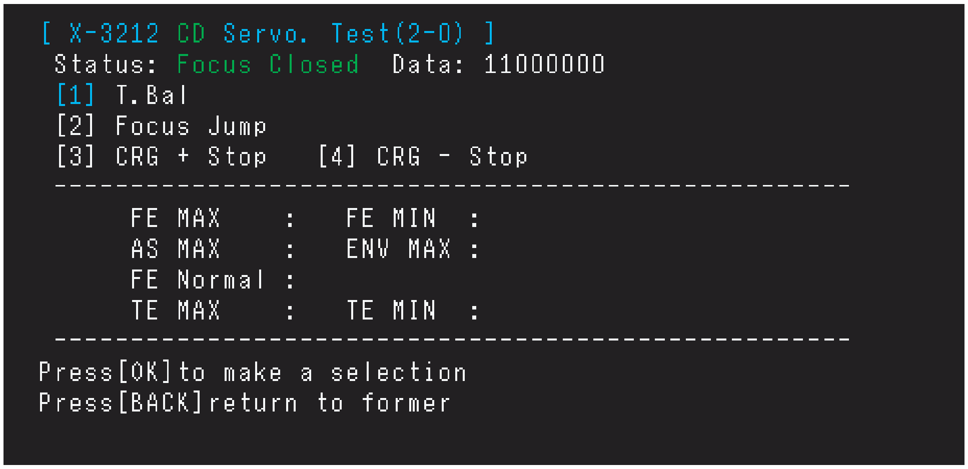


```
[ X-3212 CD Servo. Test(1-0) ]
 Status: Power On  Data: 02000000
 [1] Focus Close [2] Focus Search Start [3] CRG + Stop
 [4] CRG - Stop  [5] LD-OFF->LD-ON      [6] CRG_HOME
 ----------------------------------------------------
      FE Offset :   TE Offset  :
      AS Offset :   ENV Offset :
      TG Offset :   DBAL       :
      VIN_01    :   VIN_02     :
      VIN_03    :   VIN_04     :
      VIN_05    :   VIN_06     :
      VIN_07    :   VIN_08     :
      VIN_09    :   VIN_10     :
Press[OK]to make a selection,Press[BACK]return to former
```

Note) If no action is taken for approximately 10 seconds after LD-ON, it will be switched to LD-OFF automatically.
If F close is selected in LD-OFF state, it will become an error.
Because it will be in conflict with the safety regulation if LD_OFF is not selected within 10 seconds during focus search (S character measurement mode), too, it will switch to LD-OFF after 9 seconds even if the focus search is conducted after LD-ON.
If F close is to be selected after focus search (S character measurement mode), select Power_OFF once then power on again before F close.
Operation cannot be made until completion of displaying the value from FE Offset to VIN_10.
[1] cannot be executed unless [5] command is executed once.

[1]	Succeed to Focus Close 1 state.
[2]	Execution and stop of Focus Search
[3]	Execution and stop of CRG+
[4]	Execution and stop of CRG-
[5]	On/Off of LD
[6]	Execution of CRG_HOME
[OK]	Execution/stop
[BACK]	1, [X-3212 Servo Test]: Return to Power Off state screen.

3. [x-3212 Servo Test (2-0)]: Focus Close 1 state screen

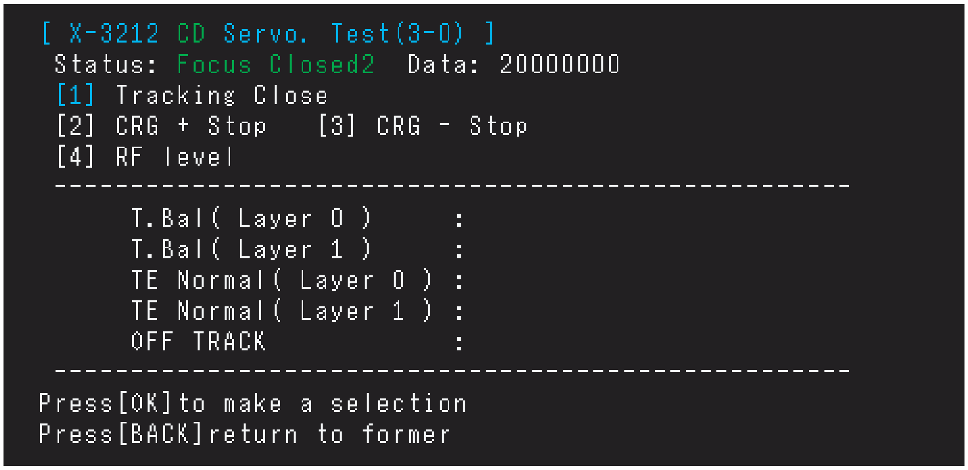


```
[ X-3212 CD Servo. Test(2-0) ]
 Status: Focus Closed  Data: 11000000
 [1] T.Bal
 [2] Focus Jump
 [3] CRG + Stop   [4] CRG - Stop
 -----------------------------------------------------
      FE MAX    :   FE MIN  :
      AS MAX    :   ENV MAX :
      FE Normal :
      TE MAX    :   TE MIN  :
 -----------------------------------------------------
Press[OK]to make a selection
Press[BACK]return to former
```

Note) Value of the data will change upon execution of the command.
Operation cannot be made until completion of displaying the value from FE MAX to TE MIN.

[1]	Succeed to Focus Close 2 state.
[2]	Execution of Focus Jump
[3]	Execution and stop of CRG+
[4]	Execution and stop of CRG-
[OK]	Execution/stop
[BACK]	1, [X-3212 Servo Test]: Return to Power Off state screen.

4. [X-3212 Servo Test (3-0)]: Focus Close 2 state screen

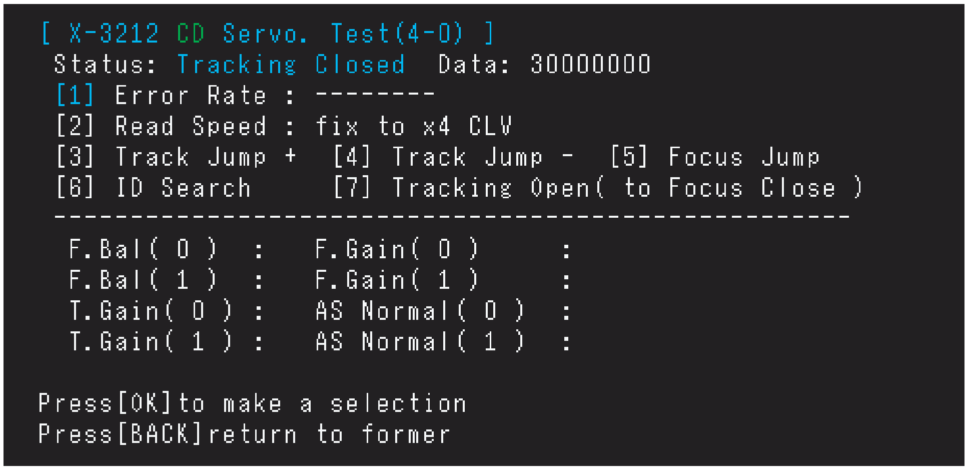


```
[ X-3212 CD Servo. Test(3-0) ]
 Status: Focus Closed2  Data: 20000000
 [1] Tracking Close
 [2] CRG + Stop    [3] CRG - Stop
 [4] RF level
 ----------------------------------------------------
      T.Bal( Layer 0 )     :
      T.Bal( Layer 1 )     :
      TE Normal( Layer 0 ) :
      TE Normal( Layer 1 ) :
      OFF TRACK            :
 ----------------------------------------------------
Press[OK]to make a selection
Press[BACK]return to former
```

Note) Value of the data will change upon execution of the command.
Operation cannot be made until completion of displaying the value from T. Bal to OFF TRACK.

[1]	Succeed to Tracking Close state.
[2]	Execution and stop of CRG+
[3]	Execution and stop of CRG-
[4]	Succeed to RF Level display state.
[OK]	Execution/stop
[BACK]	1, [X-3212 Servo Test]: Return to Power Off state screen.

5. [X-3212 Servo Test (4-0)]: Tracking Close state screen

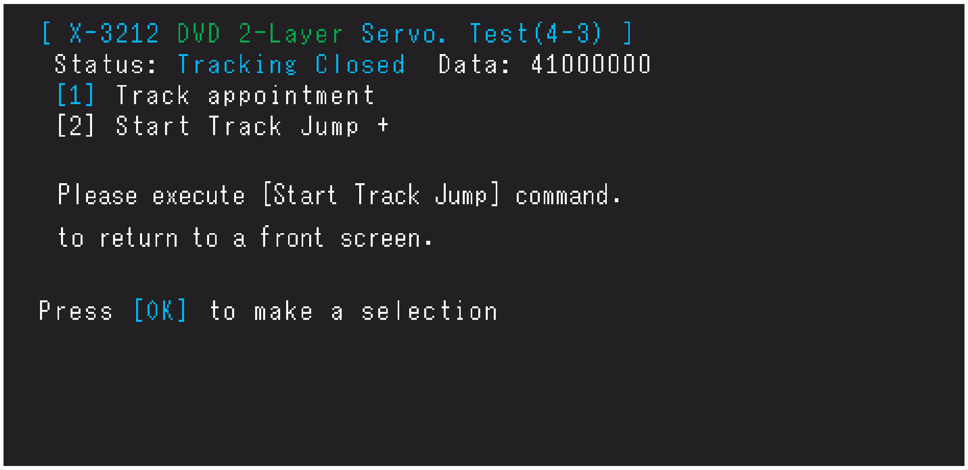


```
[ X-3212 CD Servo. Test(4-0) ]
 Status: Tracking Closed  Data: 30000000
 [1] Error Rate : --------
 [2] Read Speed : fix to x4 CLV
 [3] Track Jump +  [4] Track Jump -  [5] Focus Jump
 [6] ID Search     [7] Tracking Open( to Focus Close )
 ----------------------------------------------------
  F.Bal( 0 )  :   F.Gain( 0 )     :
  F.Bal( 1 )  :   F.Gain( 1 )     :
  T.Gain( 0 ) :   AS Normal( 0 )  :
  T.Gain( 1 ) :   AS Normal( 1 )  :

Press[OK]to make a selection
Press[BACK]return to former
```

Note) Value of the data will change upon execution of the command.
Operation cannot be made until completion of displaying the value from F. Bal(0) to AS Normal(1).

[1]	Error Rate display (Operation cannot be made for approximately 10 seconds after execution.)
[2]	Read speed change (Fixed speed for CD.)
[3]	Go to Track Jump + screen.
[4]	Go to Track Jump – screen.
[5]	Execution of Focus Jump
[6]	Go to ID Search screen.
[7]	3, [x-3212 Servo Test (2-0):] Succeed to Focus Close 1 state screen
[OK]	Execution/stop
[BACK]	1, [X-3212 Servo Test]: Return to Power Off state screen.

6. [X-3212 Servo Test (4-3)]: Track Jump +/- screen

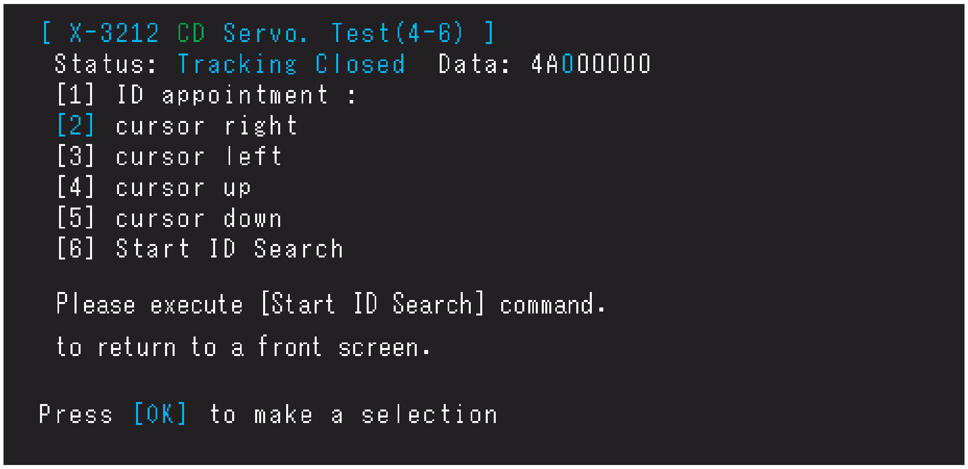


```
[ X-3212 DVD 2-Layer Servo. Test(4-3) ]
 Status: Tracking Closed  Data: 41000000
 [1] Track appointment
 [2] Start Track Jump +

 Please execute [Start Track Jump] command.
 to return to a front screen.

Press [OK] to make a selection
```

Note) Value of the data will change upon execution of the command.

[1]	The value of the data is switched to cyclic for each execution. For CD: 1→ 4→10→11→32→1→ … [track] For DVD: 1→ 4 →10→11→32→64 →100→1→ … [track]
[2]	Execution of Track Jump +/-.
[OK]	Execution
[BACK]	5, [X-3212 Servo Test (4-0): Return to Tracking Close state screen (Selectable only after execution of Track Jump.)

7. [X-3212 Servo Test (4-5)]: ID Search screen

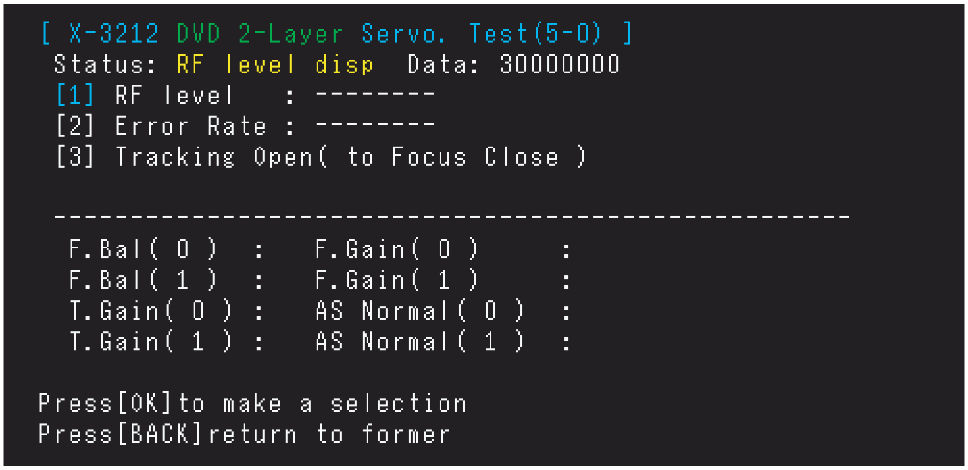


```
[ X-3212 CD Servo. Test(4-6) ]
 Status: Tracking Closed  Data: 4A000000
 [1] ID appointment :
 [2] cursor right
 [3] cursor left
 [4] cursor up
 [5] cursor down
 [6] Start ID Search

 Please execute [Start ID Search] command.
 to return to a front screen.

Press [OK] to make a selection
```

Note) Value of the data will change upon execution of the command.

[1]	Display of ID
[2]	Blue digit of the Data is shifted to the right by one digit.
[3]	Blue digit of the Data is shifted to the left by one digit. (Shifting can be made only up to the 3rd digit from the left.)
[4]	The number of the blue digit of the data is increased by 1.
[5]	The number of the blue digit of the data is decreased by 1.
[6]	Start of ID Search
[OK]	Execution
[BACK]	5, [X-3212 Servo Test (4-0): Return to Tracking Close state screen (Selectable only after execution of ID Search.)

8. [X-3212 Servo Test (5-0)]: RF level display state screen



```
 [ X-3212 DVD 2-Layer Servo. Test(5-0) ]
  Status: RF level disp  Data: 30000000
  [1] RF level    : --------
  [2] Error Rate  : --------
  [3] Tracking Open( to Focus Close )

  ----------------------------------------------------
   F.Bal( 0 )  :   F.Gain( 0 )      :
   F.Bal( 1 )  :   F.Gain( 1 )      :
   T.Gain( 0 ) :   AS Normal( 0 )   :
   T.Gain( 1 ) :   AS Normal( 1 )   :

 Press[OK]to make a selection
 Press[BACK]return to former
```

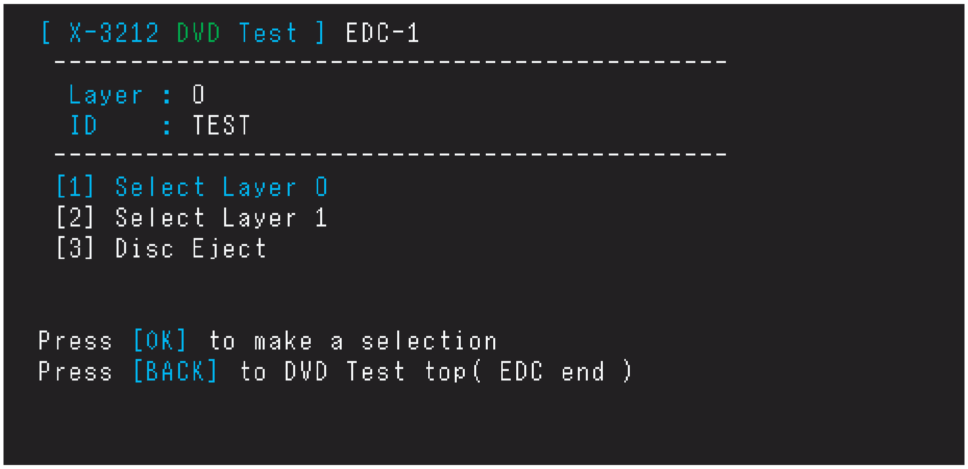
Note) Value of the data will change upon execution of the command.
Operation cannot be made until completion of displaying the value from F. Bal (0) to AS Normal (1).

[1]	Display of RF level
[2]	Display of Error rate
[3]	Succeed to Focus Close 1 state screen
[OK]	Execution/stop
[BACK]	5, [X-3212 Servo Test (4-0)]: Return to Tracking Close state screen.

EDC test operational specifications

Note) The operational method is common to both EDC-1 and EDC-2 tests.

1. [X-3212 EDC-1/2 TEST]: Initial screen

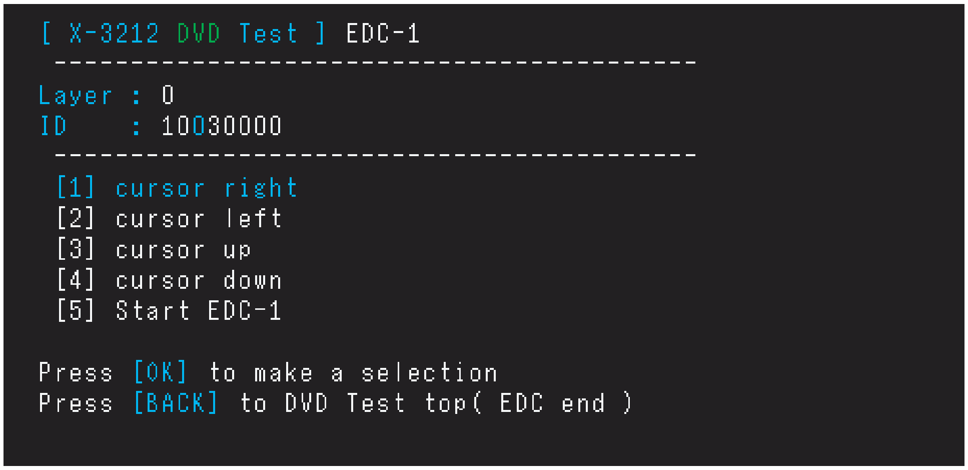


```
 [ X-3212 DVD Test ] EDC-1
  --------------------------------------------
    Layer : 0
    ID    : TEST
  --------------------------------------------
   [1] Select Layer 0
   [2] Select Layer 1
   [3] Disc Eject


 Press [OK] to make a selection
 Press [BACK] to DVD Test top( EDC end )
```

Note) Value of the ID will change upon execution of the command.

[1]	Go to setting screen of 2, [X-3212 EDC-1/2 Test Layer 0]
[2]	Go to setting screen of 3, [X-3212 EDC-1/2 Test Layer 1]
[3]	Ejection of the disc
[OK]	Execution
[BACK]	Exit from MS5 check.

2. [X-3212 EDC-1/2 Test Layer 0]

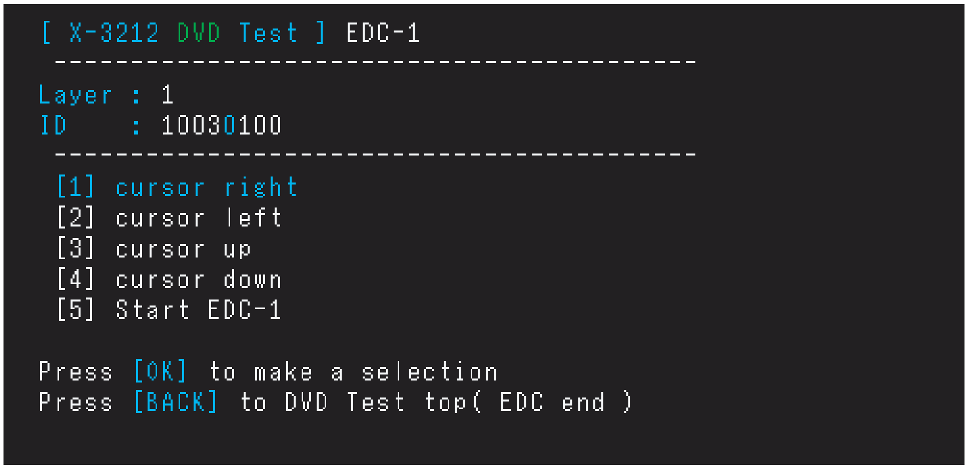


```
[ X-3212 DVD Test ] EDC-1
 -------------------------------------------
Layer : 0
ID    : 10030000
 -------------------------------------------
 [1] cursor right
 [2] cursor left
 [3] cursor up
 [4] cursor down
 [5] Start EDC-1

Press [OK] to make a selection
Press [BACK] to DVD Test top( EDC end )
```

Note) Value of the ID will change upon execution of the command.

[1]	Shift the blue digit of the ID to the right by one digit.
[2]	Shift the blue digit of the ID to the left by one digit. (Shifting can be made up to the 3rd digit from the left.)
[3]	The number of the blue digit of the ID is increased by 1.
[4]	The number of the blue digit of the ID is decreased by 1.
[5]	Start of EDC test
[OK]	Execution
[BACK]	Exit from MS5 check.

3. X-3212 EDC-1/2 Test Layer 1]



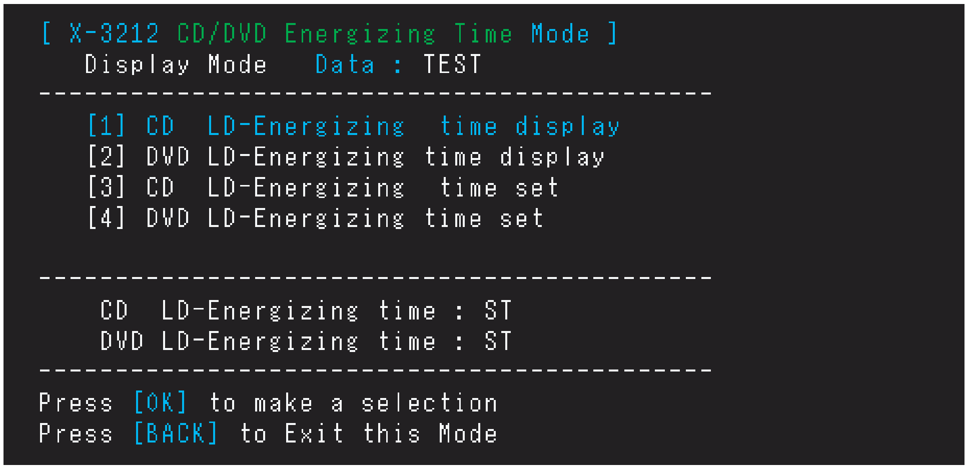
```
[ X-3212 DVD Test ] EDC-1
 -------------------------------------------
Layer : 1
ID    : 10030100
 -------------------------------------------
 [1] cursor right
 [2] cursor left
 [3] cursor up
 [4] cursor down
 [5] Start EDC-1

Press [OK] to make a selection
Press [BACK] to DVD Test top( EDC end )
```

Note) Value of the ID will change upon execution of the command.

[1]	Shift the blue digit of the ID to the right by one digit.
[2]	Shift the blue digit of the ID to the left by one digit. (Shifting can be made up to the 3rd digit from the left.)
[3]	The number of the blue digit of the ID is increased by 1.
[4]	The number of the blue digit of the ID is decreased by 1.
[5]	Start of EDC test
[OK]	Execution
[BACK]	Exit from MS5 check.

Operational specifications for the LD energizing time setting

1. [x-3212 CD/DVD Energizing Time Mode]: LD initial screen



```
[ X-3212 CD/DVD Energizing Time Mode ]
   Display Mode   Data : TEST
--------------------------------------------
   [1] CD  LD-Energizing  time display
   [2] DVD LD-Energizing time display
   [3] CD  LD-Energizing  time set
   [4] DVD LD-Energizing time set

--------------------------------------------
    CD  LD-Energizing time : ST
    DVD LD-Energizing time : ST
--------------------------------------------
Press [OK] to make a selection
Press [BACK] to Exit this Mode
```

Note) Value of the data will change upon execution of the command.

[1]	The current CD energizing preset time is displayed.
[2]	The current DVD energizing preset time is displayed.
[3]	Go to CD energizing time setting screen. (Not for service use)
[4]	Go to DVD energizing time setting screen. (Not for service use)
[OK]	Execution
[BACK]	Exit from MS5 check.

6.10 USING THE TEST DISC

TEST DISC Part No. : GGV1303
Remote Control Uint Part No. : CXC6317 (Operation mode switch : SW1 : AVH, SW2 : DVD)

1. Start / Termination

1-1. Start

After insertion of test disk, the title “NN700 TEST DISC” is displayed.
(If CD-ROM is the media for TESTDISC, background of the title will be red.)
If the [C] key on the remote controller is pressed while the title is being displayed, the menu screen appears.
If no key is pressed during the period, the first screen of test screens for line appears.

Title screen

NN700 TEST DISC

1-2. Termination

No action is taken.

2. Key operation

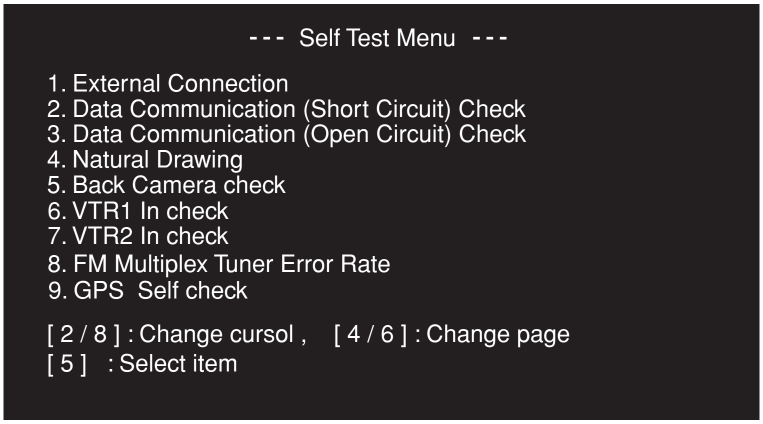
Use the remote controller for operation.

Basic operation method in the remote controller.
- ↑ (The cursor is moved up) .... [2] key
- ↓ (The cursor is moved down) .... [8] key
- ← (The cursor is moved left) .... [4] key
- → (The cursor is moved right) .... [6] key
- Decision (Enter) .... [5] key
- Return and cancellation (Cancel) .... [C] key
- Inspection execution and re-inspection ...... [0] key

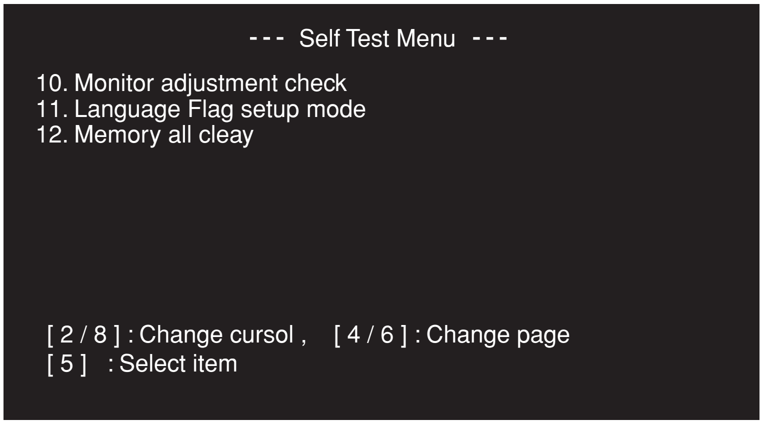
1. Use [4] and [6] keys to select the menu screen.
2. Use [2] and [8] keys to select the test items and select [5] key and move to the testing screen.
3. Use [C] key to return to the menu screen.

* Please refer to explanation on each screen for details.

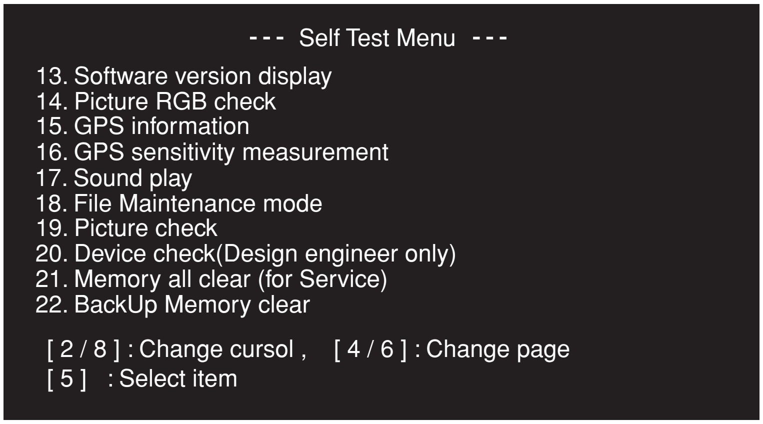
Menu screens



```
--- Self Test Menu ---

 1. External Connection
 2. Data Communication (Short Circuit) Check
 3. Data Communication (Open Circuit) Check
 4. Natural Drawing
 5. Back Camera check
 6. VTR1 In check
 7. VTR2 In check
 8. FM Multiplex Tuner Error Rate
 9. GPS  Self check

 [ 2 / 8 ] : Change cursol ,    [ 4 / 6 ] : Change page
 [ 5 ]   : Select item
```



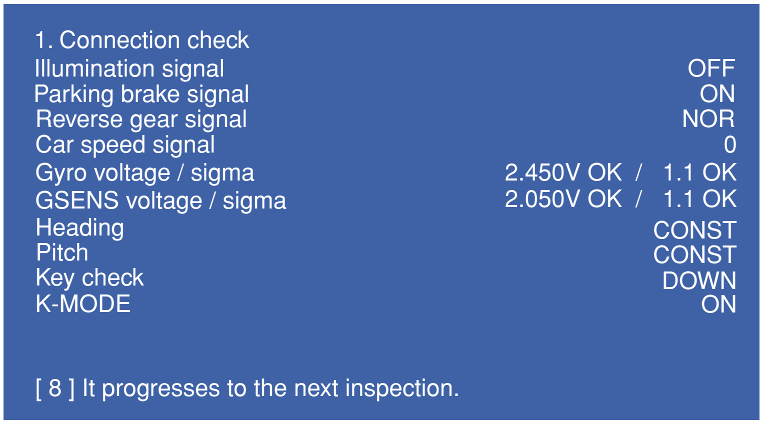
```
--- Self Test Menu ---

10. Monitor adjustment check
11. Language Flag setup mode
12. Memory all cleay

 [ 2 / 8 ] : Change cursol ,    [ 4 / 6 ] : Change page
 [ 5 ]   : Select item
```



```
--- Self Test Menu ---
13. Software version display
14. Picture RGB check
15. GPS information
16. GPS sensitivity measurement
17. Sound play
18. File Maintenance mode
19. Picture check
20. Device check(Design engineer only)
21. Memory all clear (for Service)
22. BackUp Memory clear

 [ 2 / 8 ] : Change cursol ,    [ 4 / 6 ] : Change page
 [ 5 ]   : Select item
```

3. Inspection screen

1. Connection check



1. Connection check

Illumination signal	OFF
Parking brake signal	ON
Reverse gear signal	NOR
Car speed signal	0
Gyro voltage / sigma	2.450V OK / 1.1 OK
GSENS voltage / sigma	2.050V OK / 1.1 OK
Heading	CONST
Pitch	CONST
Key check	DOWN
K-MODE	ON

[8] It progresses to the next inspection.

- The status of above items is updated approximately every single second.
- Set ANTON port to H when starting the inspection and set to L when ending.
- When the gyro is in operation, a BEEP sound will be made when the G sensor is activated.
  Right: 500 Hz, Left: 700 Hz, Up: 800 Hz, Down: 600 Hz
- Conditions for moving on to the next inspection
  Illumination status is changing between ON and OFF.
  Parking brake status is changing between ON and OFF.
  Reverse status is changing between NOR and REV.
  Pulse is changing to a value other than 0/0.
  K-mode status is changing between ON and OFF.

Standard value for other items

- GYRO voltage
  OK: 2.5 ± 0.15
  USABLE: 2.5 ± 0.30
- GYRO variation
  OK: Less than 30
- G sensor voltage
  OK: 2.5 ± 0.15
  USABLE: 2.5 ± 0.30
- G sensor variation
  OK: Less than 60

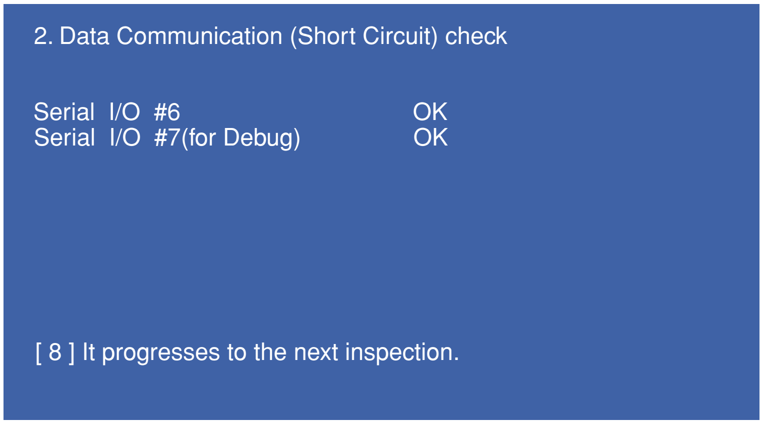
- Only when all the conditions are met, you can move on to the next inspection by the [8] key on the remote controller. It should be noted, however, that you will not be able to move on to the next inspection if there is an error (background color is red) even if the conditions are met.

- Checking of “K-MODE” is available only on the UC model.
  “K-MODE” will not be displayed on the EW model.

<Supplemental explanation regarding error display>

Displayed message	Details of the error
Structure data error	An error that is generated when data cannot be received from the AD converter. The possible cause is the device error in the AD converter. This error is also generated when the car speed pulse cannot be measured. (rare case)
DRAGON unconnected	An error that is generated when communication is not established with DRAGON. The possible cause is the hardware error causing interruption of communication. It is highly likely that this results from the hardware error of DRAGON.
Command error	A response timeout error for BIOS call. The possible cause is the hardware error causing interruption of communication. It is highly likely that this results from the hardware error of DRAGON.
Unknown error	Error of unknown causes.

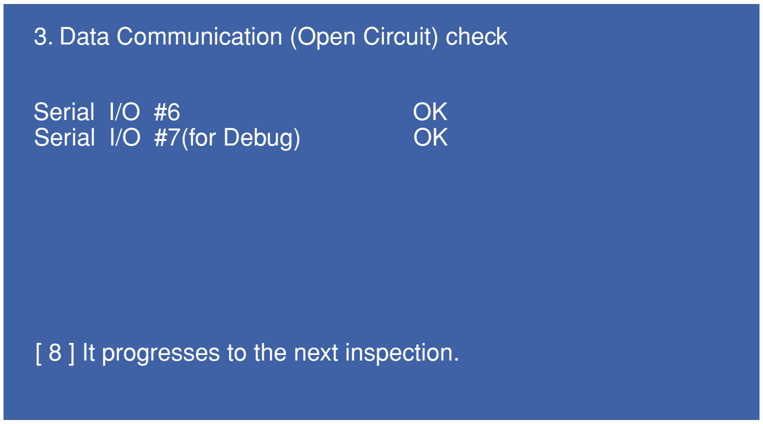
2. Data Communication (Short Circuit) check (Not for service)



```
2. Data Communication (Short Circuit) check

Serial  I/O  #6                    OK
Serial  I/O  #7(for Debug)         OK

[ 8 ] It progresses to the next inspection.
```

- Short circuit in SIO connection is checked.
- Loopback in 6CH and 7 CH is checked.
- A “wait” screen is displayed until the check is completed.
- While the test result screen is being displayed, press the [0] key to perform retesting.
- Only when “OK” is displayed, you can go on to the next test with the [8] key.

3. Data Communication (Open Circuit) check (Not for service)



```
3. Data Communication (Open Circuit) check

Serial  I/O  #6                    OK
Serial  I/O  #7(for Debug)         OK

[ 8 ] It progresses to the next inspection.
```

- Open circuit in SIO connection is checked.
- 6CH and 7CH are checked.
- Do not connect anything to the terminal. In the released state, ”OK” will be displayed.
- A “wait” screen is displayed until the check is completed.
- While the test result screen is being displayed, press the [0] key to perform retesting.
- Only when “OK” is displayed, go on to the next test with the [8] key.

4. Natural Drawing

- Nature images with 256 colors are drawn on the BG surface.
- The ADPCM 1 kHz sine wave, which sampling rate is 19 kHz, is output for 30 seconds.
- With the [NAVI] key, GUIDEON terminal can be switched between “H” / “L” with a toggle.
- With the [4] key or the [6] key, the volume can be changed.
  [JPEG file name: ZHITO1.JPEG]
  [Audio file name: A19K01KS.WAV]
- Press the [8] key to go on to the next test.

5. Back Camera check

Images in the back camera

In this test, check with eyes that images in the back camera is being displayed.

- Images in the back camera are displayed.
- Press the [8] key to go on to the next test.

6. VTR1 In check

External input image

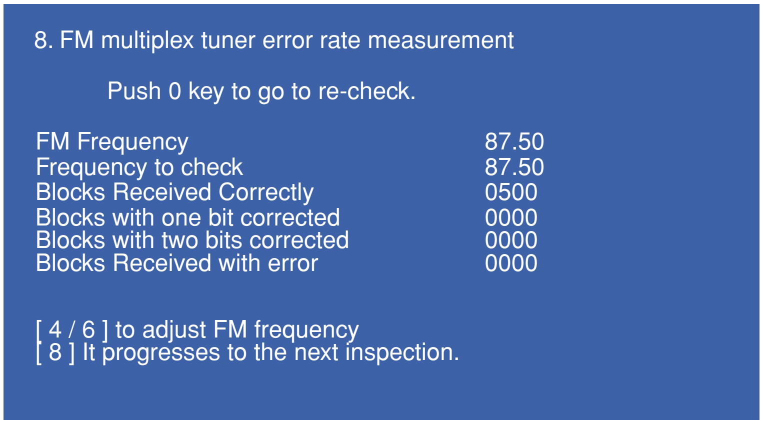
- On the screen, external input video (Front VTR image) is displayed.
- Press the [8] key to go on to the next test.

7. VTR2 In check

External input image

- On the screen, external input video (Rear VTR image) is displayed.
- Press the [8] key to go on to the next test.

8. FM multiplex tuner error rate measurement



8. FM multiplex tuner error rate measurement

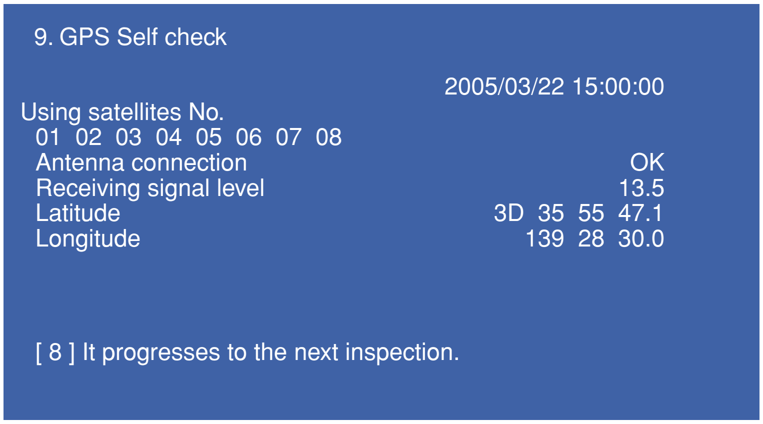
Push 0 key to go to re-check.

FM Frequency	87.50
Frequency to check	87.50
Blocks Received Correctly	0500
Blocks with one bit corrected	0000
Blocks with two bits corrected	0000
Blocks Received with error	0000

[4 / 6] to adjust FM frequency
[8] It progresses to the next inspection.

- FM multiplexing error is measured.
- In the case of UC model, this inspection is not performed and the system will move on to the next inspection.
- Default frequency is 87.5 MHz.
- When entering this mode for the first time, the result of measurement at the time of test disc boot up will be displayed.
- After the measurement is taken, the frequency can be changed by the [4] and [6] keys.
- 500 blocks will be measured, and if there are 450 or more blocks without error, then it will be determined as OK.
- Only when “OK” is displayed, you can go on to the next test with the [8] key.
- Use the [0] key to start re-inspection.

9. GPS Self check



9. GPS Self check

2005/03/22 15:00:00

Using satellites No.
01 02 03 04 05 06 07 08

Antenna connection	OK
Receiving signal level	13.5
Latitude	3D 35 55 47.1
Longitude	139 28 30.0

[8] It progresses to the next inspection.

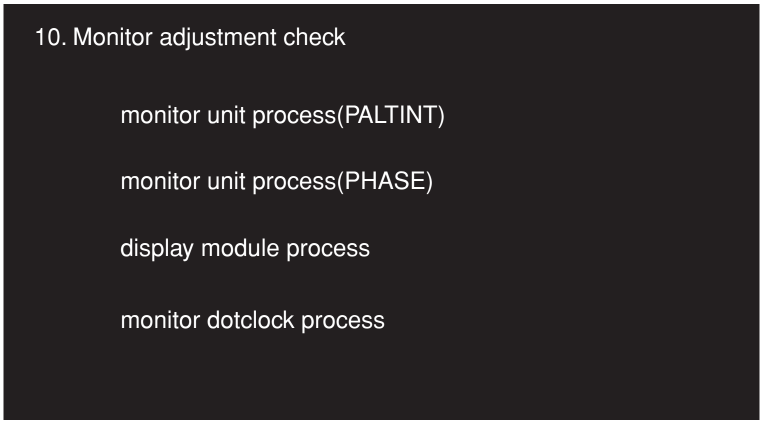
- The GPS reception state is displayed.
- Conditions to go on to the next test
  - The antenna connection is “OK”.
  - Data is obtained from one or more satellites.
  - Time is being displayed.
- When all of the above conditions are satisfied, the background color changes into blue.
- Only when all of the above conditions are satisfied, go on to the next test with the [8] key. However, in case of error occurs (background: red), you cannot go on to the next test even if all conditions are satisfied.
- In case a command error has occurred during GPS signal receiving inspection, the detailed screen of the command error will be displayed.
- There are two screens for the command error detailed screen, a screen that displays the state of BIOS call used in GPS signal receiving in real-time and a screen which displays the history from the time of command error occurrence up to 40 times, and the screen can be switched between these two by [5] key.

To save the error information, it is so designed that you cannot return from the command error detailed screen to the normal inspection screen. If you desire to resume the inspection, eject the disc once, and insert the test disc once again.

<Supplemental explanation regarding error display>

Displayed message	Details of the error
No connection to DRAGON	This is an error when communication with DRAGON is not established. Communication error due to a hardware problem could be the cause. It is highly possible that the hardware on the DRAGON side is defective.
Command error	Time out error for response to BIOS call. Communication error due to a hardware problem could be the cause. It is highly possible that the hardware on the DRAGON side is defective.
Invalid data	This is an error when request is made while the data for response is not prepared (not obtained from DRAGON). Communication error due to a hardware problem could be the cause. It is highly possible that the hardware on the DRAGON side is defective.

10. Monitor adjustment check



10. Monitor adjustment check

monitor unit process(PALTINT)

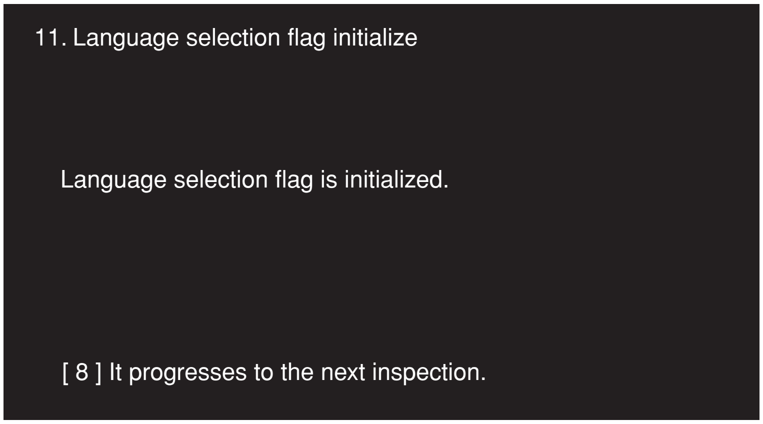
monitor unit process(PHASE)

display module process

monitor dotclock process

- Each state of “PHASE adjusted flag”, “PALTINT adjusted flag”, “Flicker adjusted flag” and “dotclock adjusted flag” is obtained from the microcomputer, and the result of whether the monitor has been adjusted or not will be displayed.
- While there is no difference between the EW model and the UC model in terms of the screen specifications, the monitor is judged to be adjusted if all adjusted flags are ON for the EW model and if “PHASE adjusted flag” and “PALTINT adjusted flag” are OFF but “Flicker adjusted flag” is ON for the UC model, and you can proceed to the next inspection by pressing the [8] key.
- If the above conditions for the EW and the UC models are not met, the monitor is judged to be unadjusted and NG screen will be displayed.

11. Language Flag setup mode



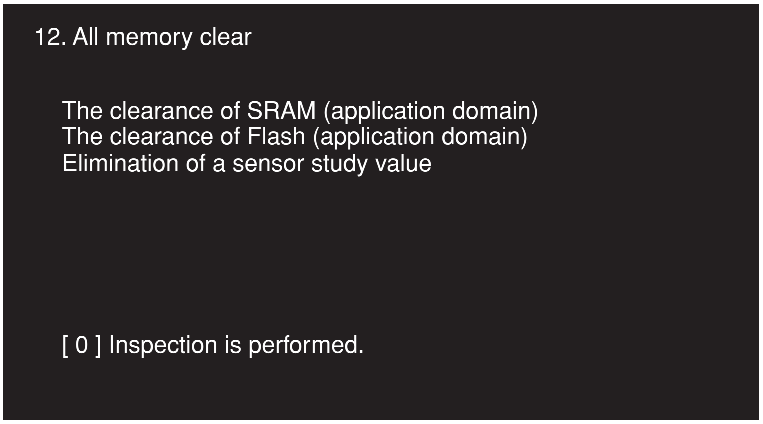
11. Language selection flag initialize

Language selection flag is initialized.

[8] It progresses to the next inspection.

- When the system enters into this inspection, language selection will be set to the original setting made at the time of shipment (i.e. no setting).
  * The setting is made to display the screen for selecting the language to be used at the initial boot up after the shipment out of the factory.
- The setting is made when the system enters into this inspection.
- Press the [8] key to go on to the next test.

12. Memory all clear (Not for service)



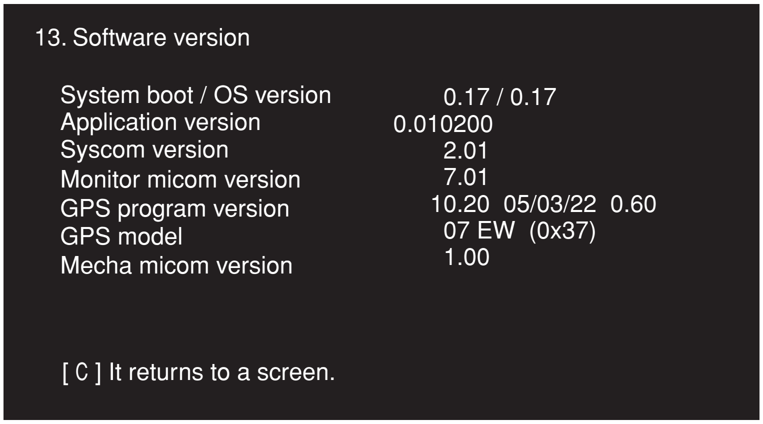
12. All memory clear

The clearance of SRAM (application domain)
The clearance of Flash (application domain)
Elimination of a sensor study value

[0] Inspection is performed.

- SRAM (application domain) is cleared.
- FLASH (application domain) is cleared.
- Sensor learning level is cleared.
- If SRAM clear is not successful, FLASH will not be cleared.
- After displaying the test screen, press the [0] key to execute the above processing.
- The execution results are displayed.
- Only when all is “OK”, press the [8] key to end the production engineering test and return to the menu screen.

13. Software version display



13. Software version

System boot / OS version	0.17 / 0.17
Application version	0.010200
Syscom version	2.01
Monitor micom version	7.01
GPS program version	10.20 05/03/22 0.60
GPS model	07 EW (0x37)
Mecha micom version	1.00

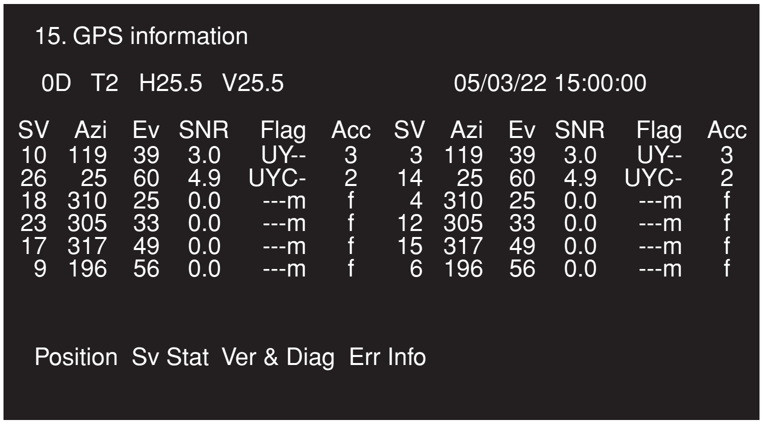
[C] It returns to a screen.

- The software versions are displayed.
- As for the GPS model, it will be considered OK if "07 EW (0x37)" is displayed in the case of EW model and if "07 UC (0x38)" is displayed for UC model.

14. Picture RGB check

- Bridge tests are performed for RGB.
- Pressing the [4] key or the [6] key switches the screens.
- RGB is plotted in the following pattern: R100% -> R50% -> G100% -> G50% -> B100% -> B50%
- 6 screens are displayed in total.

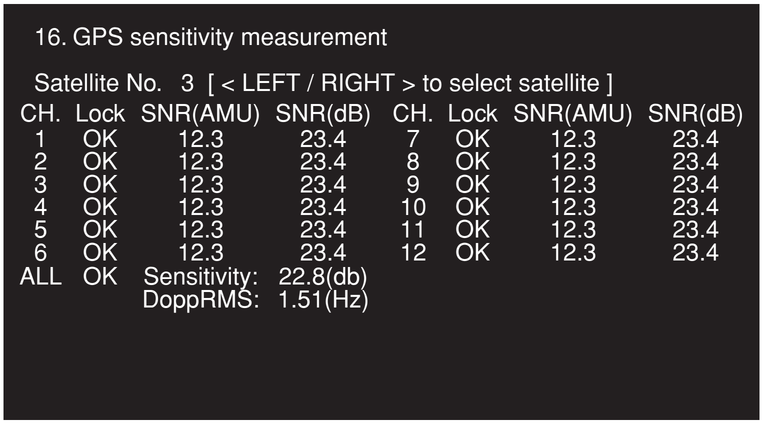
15. GPS information



```
15. GPS information

 0D   T2   H25.5   V25.5                      05/03/22 15:00:00

SV   Azi   Ev   SNR     Flag    Acc   SV   Azi   Ev   SNR     Flag    Acc
10   119   39   3.0     UY--     3     3   119   39   3.0     UY--     3
26    25   60   4.9     UYC-     2    14    25   60   4.9     UYC-     2
18   310   25   0.0     ---m     f     4   310   25   0.0     ---m     f
23   305   33   0.0     ---m     f    12   305   33   0.0     ---m     f
17   317   49   0.0     ---m     f    15   317   49   0.0     ---m     f
 9   196   56   0.0     ---m     f     6   196   56   0.0     ---m     f


Position  Sv Stat  Ver & Diag  Err Info
```

- The information displayed switches with the [4] key and the [6] key.
- Pressing the [5] key while the cursor is placed at “Position” displays the “position information”.
- Pressing the [5] key while the cursor is placed at “Sv Stat” displays the “status information”.
- Pressing the [5] key while the cursor is placed at “Ver&Diag” displays the “diagnostic information”.
- Pressing the [5] key while the cursor is placed at “Err Info” displays the “error information”.
- In the test, “status information” (above screen) is displayed first.

16. GPS sensitivity measurement



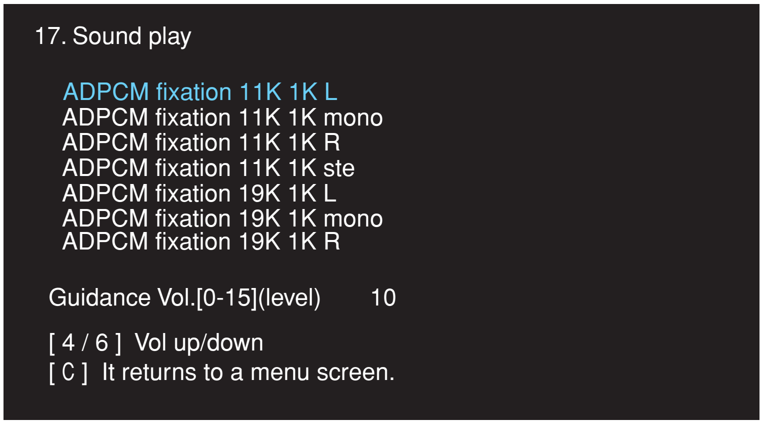
```
16. GPS sensitivity measurement

Satellite No.   3  [ < LEFT / RIGHT > to select satellite ]
CH.   Lock  SNR(AMU)  SNR(dB)  CH.  Lock  SNR(AMU)  SNR(dB)
 1     OK     12.3      23.4     7    OK     12.3      23.4
 2     OK     12.3      23.4     8    OK     12.3      23.4
 3     OK     12.3      23.4     9    OK     12.3      23.4
 4     OK     12.3      23.4    10    OK     12.3      23.4
 5     OK     12.3      23.4    11    OK     12.3      23.4
 6     OK     12.3      23.4    12    OK     12.3      23.4
ALL    OK   Sensitivity:  22.8(db)
            DoppRMS:   1.51(Hz)
```

- Press the [4] key or the [6] key to change GPS.
- The GPS sensitivity selected with the [5] key is displayed.
- If communication with the GPS unit fails, an error screen is displayed.

<Supplemental explanation regarding error display>

Displayed message	Details of the error
No connection to DRAGON	This is an error when communication with DRAGON is not established. Communication error due to a hardware problem could be the cause. It is highly possible that the hardware on the DRAGON side is defective.
Command error	Time out error for response to BIOS call. Communication error due to a hardware problem could be the cause. It is highly possible that the hardware on the DRAGON side is defective.

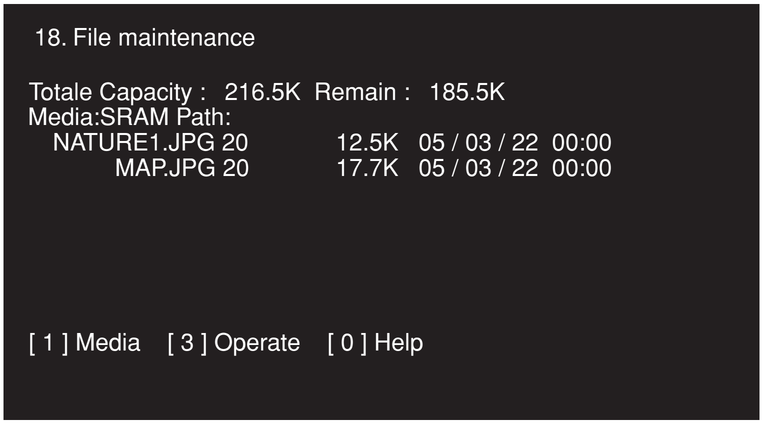
17. Sound play



```
17. Sound play

    ADPCM fixation 11K 1K L
    ADPCM fixation 11K 1K mono
    ADPCM fixation 11K 1K R
    ADPCM fixation 11K 1K ste
    ADPCM fixation 19K 1K L
    ADPCM fixation 19K 1K mono
    ADPCM fixation 19K 1K R

  Guidance Vol.[0-15](level)      10

  [ 4 / 6 ]  Vol up/down
  [ C ]  It returns to a menu screen.
```

- Audio files (in WAVE format) are played back.
- When entering the screen, set the GUIDEON terminal to “H”, and reset to “L” when exiting it.
- Press the [5] key to play back the selected audio.
- Press the [4] key or the [6] key to change the volume.

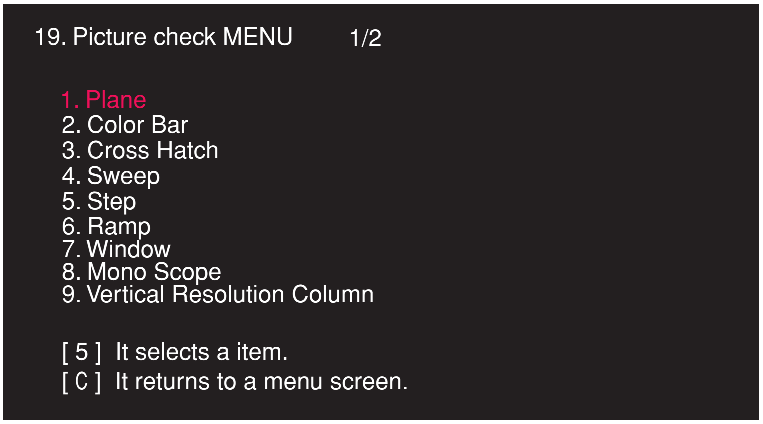
18. File Maintenance mode



```
18. File maintenance

Totale Capacity :  216.5K  Remain :  185.5K
Media:SRAM Path:
   NATURE1.JPG 20          12.5K   05 / 03 / 22  00:00
           MAP.JPG 20          17.7K   05 / 03 / 22  00:00




[ 1 ] Media    [ 3 ] Operate    [ 0 ] Help
```

- Files can be copied, deleted, or dumped.
  See HELP for usage of each function.

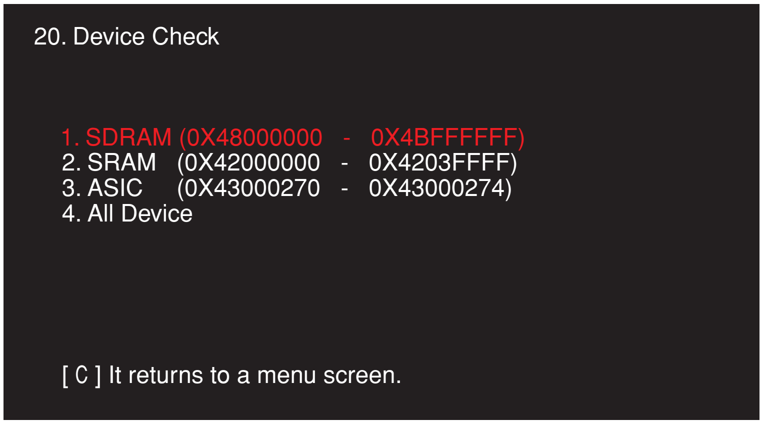
19. Picture check



```
19. Picture check MENU        1/2

    1. Plane
    2. Color Bar
    3. Cross Hatch
    4. Sweep
    5. Step
    6. Ramp
    7. Window
    8. Mono Scope
    9. Vertical Resolution Column

    [ 5 ]  It selects a item.
    [ C ]  It returns to a menu screen.
```

- Select a pattern with the [2 / 8] key and press the [5] key to display the image.

20. Device Check(Design engineer only)



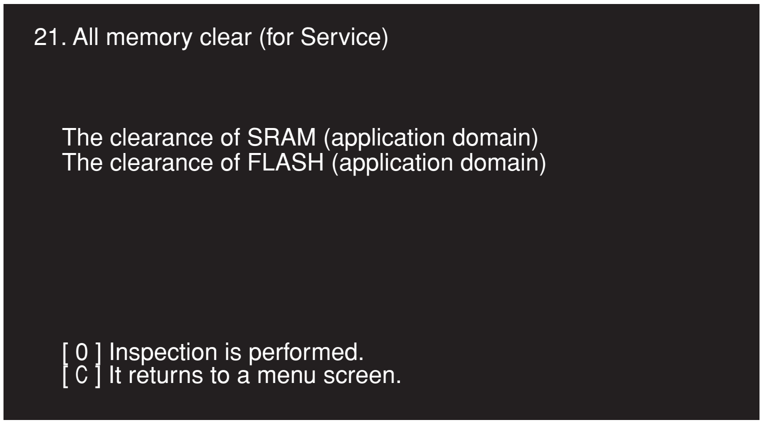
20. Device Check

1. SDRAM (0X48000000 - 0X4BFFFFFF)
2. SRAM (0X42000000 - 0X4203FFFF)
3. ASIC (0X43000270 - 0X43000274)
4. All Device

[C] It returns to a menu screen.

- The above devices will be inspected for engineering purpose.
- A device is selected by the [2] and [8] keys on the remote controller, and cleared by the [5] key.
- On each device screen, a pattern is selected by the [2] and [8] keys, and inspection is started by the [5] key.

21. Memory all clear (for Service)



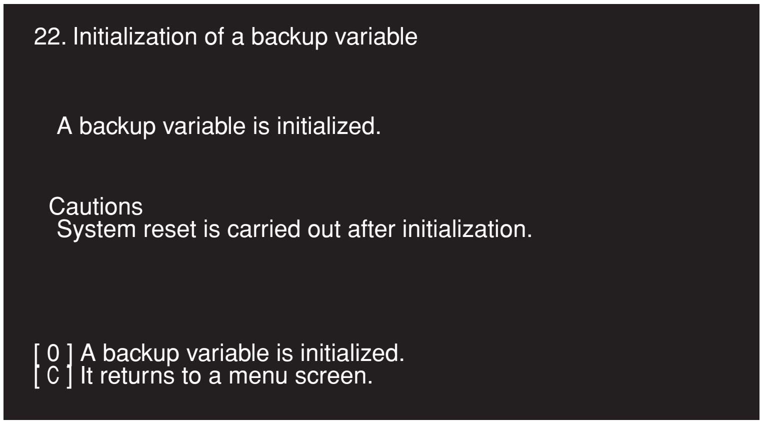
21. All memory clear (for Service)

The clearance of SRAM (application domain)
The clearance of FLASH (application domain)

[0] Inspection is performed.
[C] It returns to a menu screen.

- SRAM (application region) is cleared.
- FLASH (application region) is cleared.
- If SRAM clear is not successful, FLASH will not be cleared.
- After displaying the test screen, press the [0] key to execute the above processing.
- The execution results are displayed.

22. BackUp Memory clear



22. Initialization of a backup variable

A backup variable is initialized.

Cautions
System reset is carried out after initialization.

[0] A backup variable is initialized.
[C] It returns to a menu screen.

- Press the [0] key to initialize the backup variables and to reset the system.
- Press the [C] key to return to the menu screen.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the Case (not shown)

1. Remove the Case.

● Removing the Grille Assy (Fig.1)

1 Remove the six screws.

Disconnect the connector and then remove the Grille Assy.

*) When attaching the Grille Assy onto the main body, make the Grille Assy stick to the main body by hand (there shall be no gap), and fix them using the screws.

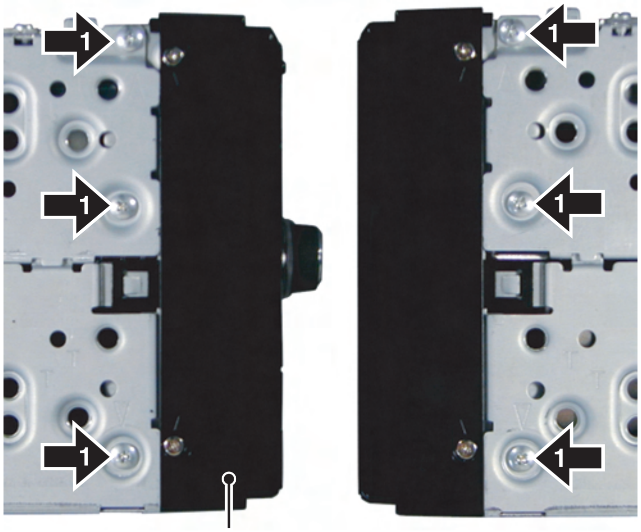


Fig.1

● Removing the Monitor Unit (Fig.2)

1 Remove the five screws.

Disconnect the connector and then remove the Monitor Unit.

*) Be sure to place the remote controller with the optical receiver facing up. Otherwise the leads of the optical receiver may be bent.

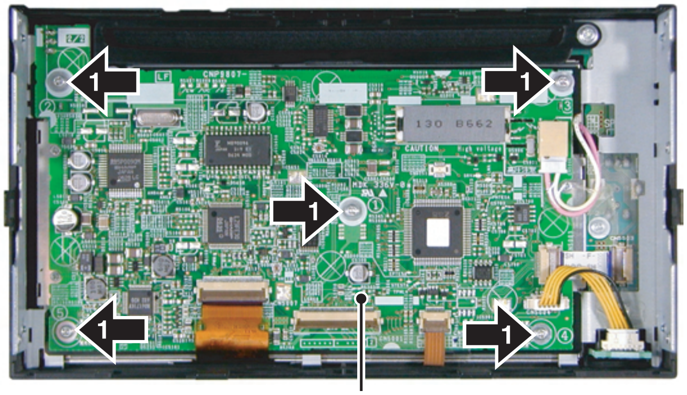


Fig.2

● Removing the LCD Assy (Fig.3)

1 Remove the four screws.

2 There is a gap between the Holder and the Grille. Put your finger in the gap and push out the Grille toward outside to release the fixed section of the Grille and the Holder. (both left and right)

*) Do not bend the Holder.

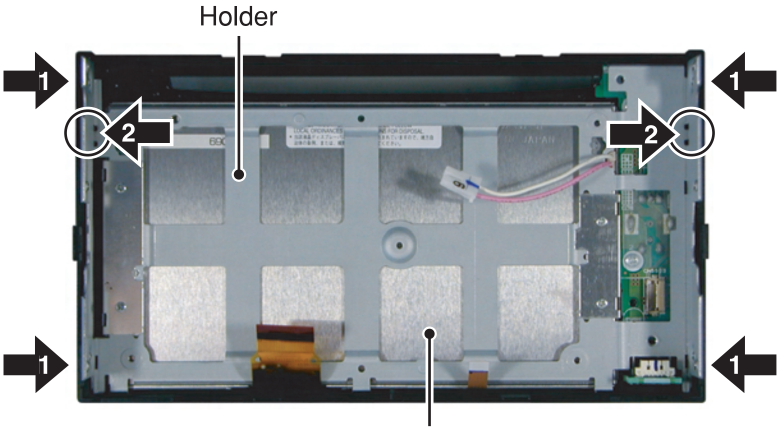


Fig.3

● Installation of the LCD Assy (Fig.4)

1 Match the three claws as shown on the drawing to the corresponding sections of the Grille. When doing so, put the Holder onto the Grille in a way that the broken-out section of the Holder will be totally hidden.

2 Push the two locations as shown on the drawing, and push all the way to the back so that the claws of the Holder and the Grille snaps in.

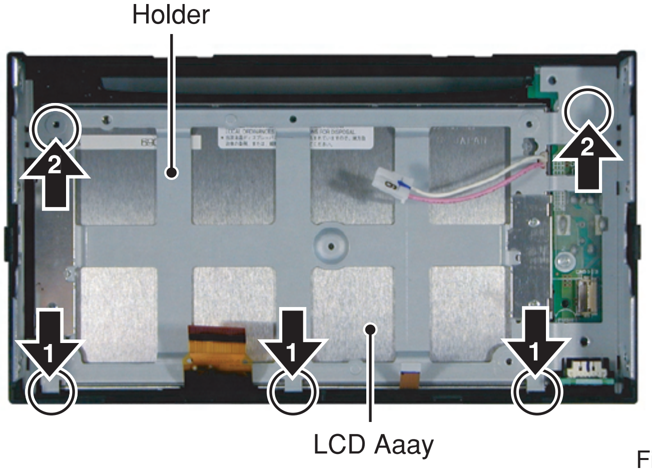


Fig.4

● Removing the DVD Mechanism Module (Fig.5)

1 Remove the four screws.

Disconnect the connector and then remove the DVD Mechanism Module.

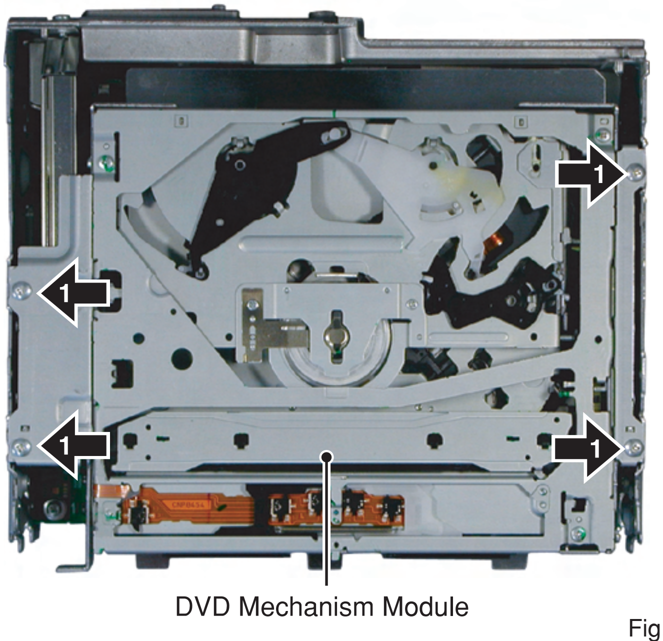


Fig.5

● Removing the Heat Sink (Fig.6)

1 Remove the two screws.

2 Remove the ten screws and then remove the Heat Sink.

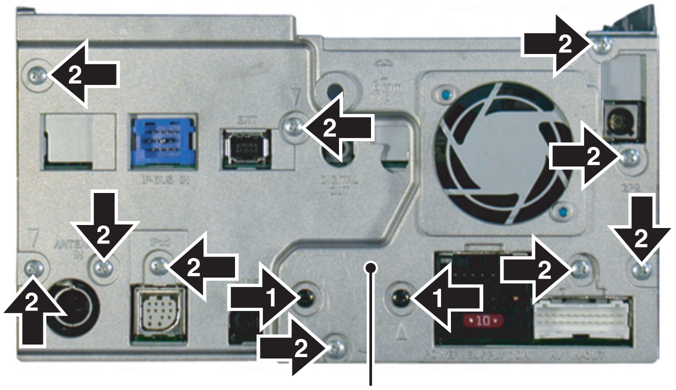


Fig.6

● Removing the Chassis (Fig.7)

1 Remove the three screws.

Disconnect the connector and then remove the Chassis.

● Removing the Navi Mother Unit (Fig.7)

2 Remove the six screws and then remove the Navi Mother Unit.

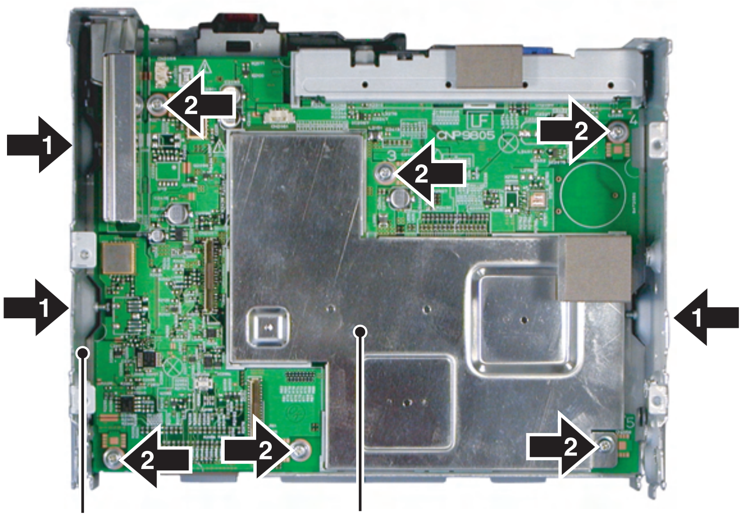


Fig.7

● Removing the AV Unit (Fig.8)

1 Remove the screw.

2 Straighten the tab at location indicated.

3 Remove the six screws and then remove the AV Unit.

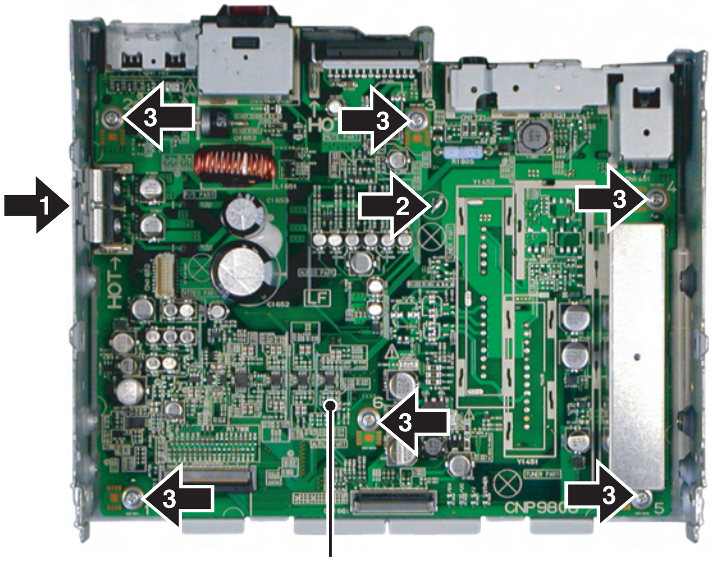


Fig.8

● How to hold the mechanism section (Fig.9)

1. Hold the main frame and the top frame.
2. As the mechanical strength of the front part of the top frame is not strong, do not hold this part.
3. Do not touch the switches provided on the top face of the mechanism section.
4. Be careful not to pull the flexible PCB on the side face.

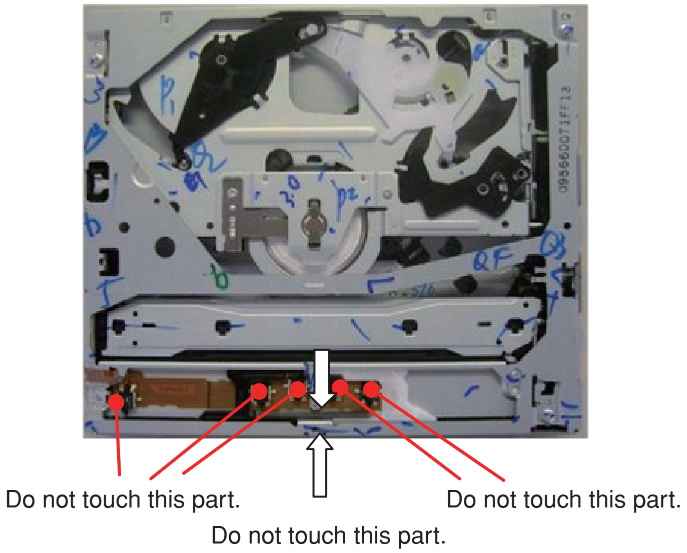
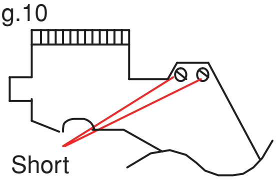


Fig.9

● How to remove the module PCB (Fig.10, Fig.11)

1. Put the mechanism section in locked state (disc load standby position).
2. Hold the mechanism module with its top face down.
3. Make the lands at 2 locations on the pick up flexible PCB short.
4. Disconnect the connectors of the pick up flexible PCB and the SPDL flexible PCB.
   (Be sure to disconnect the connectors as the flexible PCB will be damaged if the PCB is removed without removing the flexible PCB.)
5. Remove the solder joint of the lead wire of the load motor and the clamp SW.
6. Remove the two screws, and then remove the module PCB.
   (Lift up point A slightly and remove it toward B direction. Be careful as the point C is connected with a flexible PCB.)
7. Disconnect the connector of the 8-12 detection flexible PCB from the PCB.

Fig.10



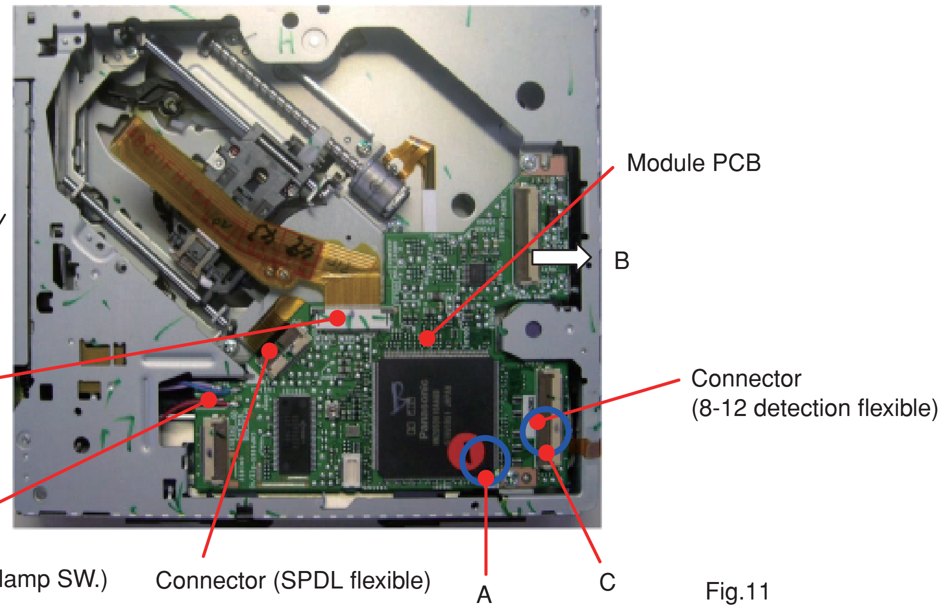

Module PCB
B
Connector
(pick up flexible)
Connector
(8-12 detection flexible)
Solder land
(load motor, lead wire of the clamp SW.)
Connector (SPDL flexible)
A
C

Fig.11

● How to remove the CRG motor assy (Fig.12)

1. Remove the module PCB according to the instructions in ìHow to remove the module PCBî.
2. Remove the Mylar tape.
3. Remove the flexible PCB of the CRG motor from the connector of the spindle motor.
4. Remove the two screws, and then remove the CRG motor assy.

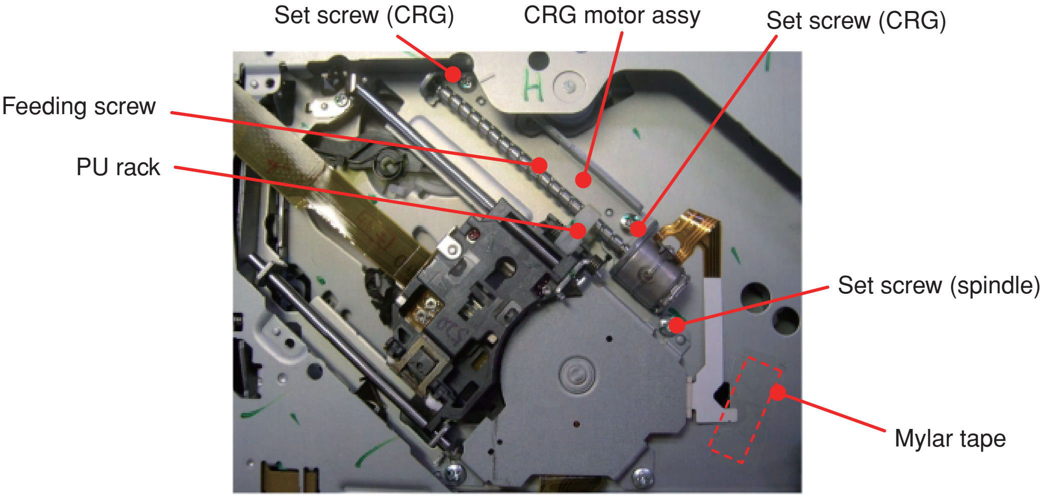


Fig.12

● How to remove the PU unit (Fig.13)

1. Remove the module PCB according to the instructions in "How to remove the module PCB".
2. Hang the main shaft holding spring to the CRG chassis temporary hanger.
3. Remove the CRG motor assy according to the instructions in "How to remove the CRG motor assy".
4. Remove the holding plate spring of the main shaft.
5. While lifting up the tip of the pick up rack, slide the main shaft, and remove the PU unit.

(Note) When mounting the PU unit again, make sure to do the adjustments of the devices mounted thereon according to the descriptions of the service manual. Furthermore, make sure to hang the main shaft holding spring permanently.

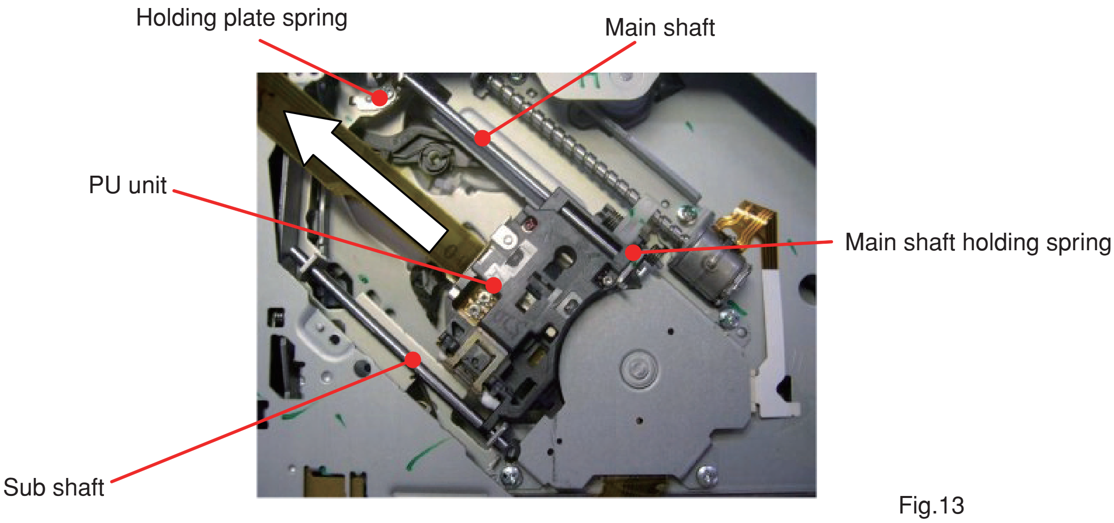
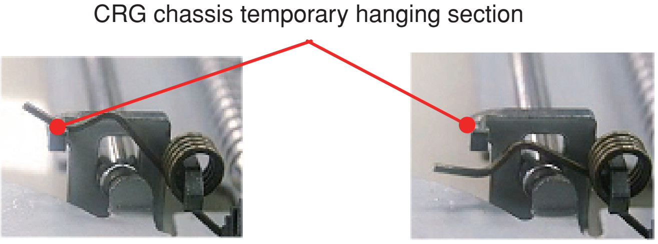


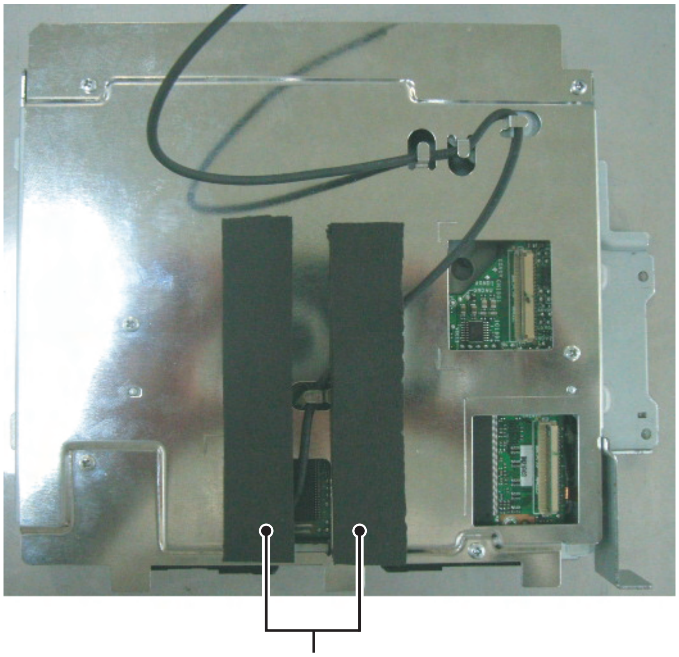
Fig.13



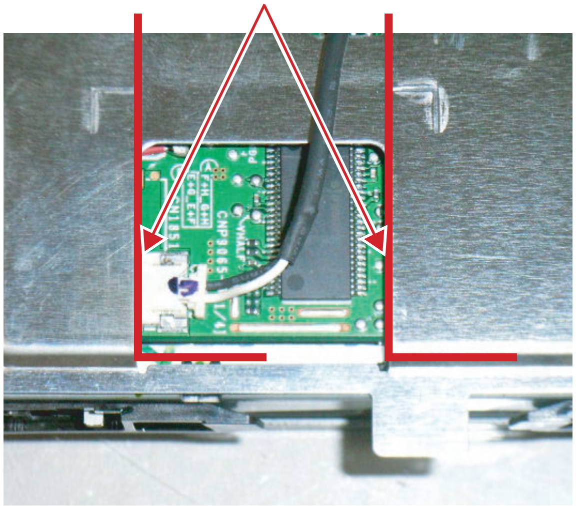
Temporary hanging

Permanent hanging

How to install the gasket, cushion and shield

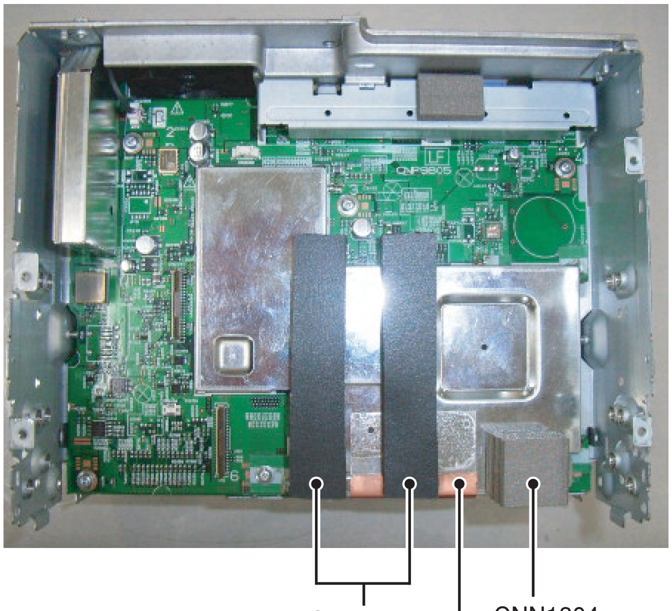


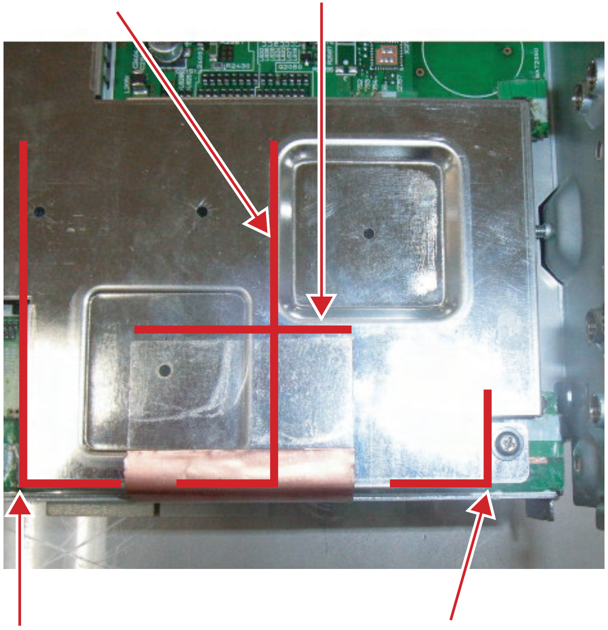
CNN1807
· Position to put :
Edge of slit



CNN1807
· Position to put :
Edge of dent

CNN1806
· Position to put(Right and left) :
During CNN1804 and CNN1807
· Position to put(Depth) :
Edge of dent





CNN1807
· Position to put :
Set it to the position
of the corner.

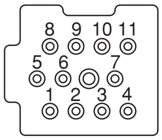
CNN1804
· Position to put :
Set it to the position
of the corner.

*** Caution**

CNN1806 : Recycling is not possible, use the new shield.
Put it not to slack.
CNN1807 : When the adhesive strength is weak, use the new cushion.

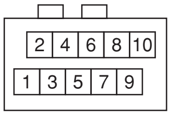
7.1.2 CONNECTOR FUNCTION DESCRIPTION

IP-BUS IN

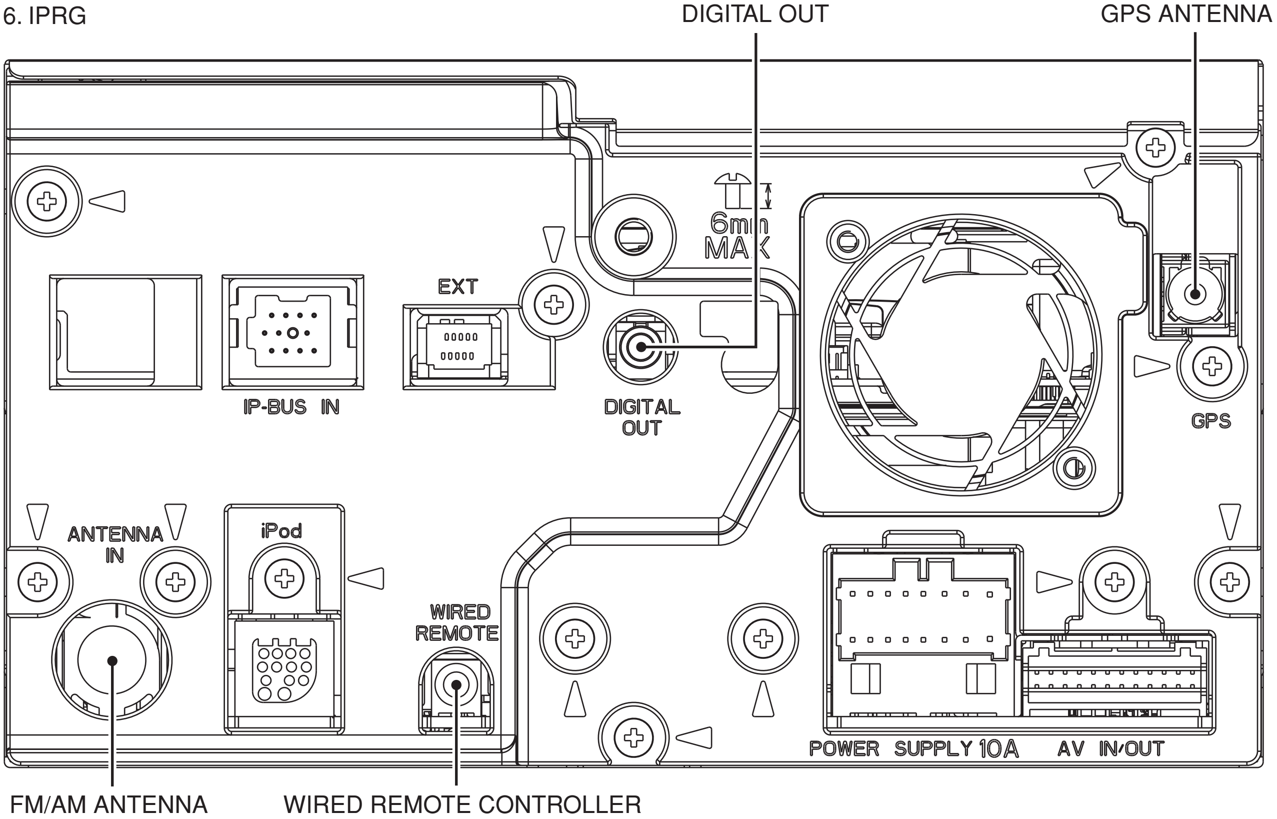


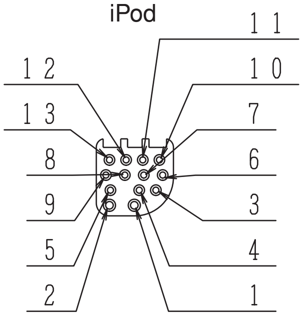
1. IPBUS+
2. IPBUSG
3. IPLG
4. NC
5. IPBUS-
6. IPRG
7. IPL+
8. ASENBO
9. IPR+
10. IPR-
11. IPL-

EXTENSION



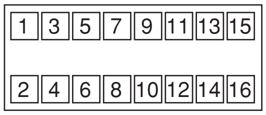
1. GTOEX
2. EXTOG
3. GND
4. CTOEX
5. EXTOC
6. HYOKA
7. CTOETC
8. ETCTOC
9. NC
10. GND





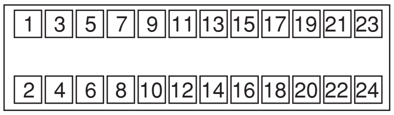
1. F/W GND
2. F/W PWR
3. TXiPod
4. ACCID
5. LOUT
6. RXiPod
7. VOUT
8. ROUT
9. GNDD
10. ACCPW
11. ACCDET
12. V_RETURN
13. A_RETURN

POWER SUPPLY



1. FR+
2. RR+
3. FR-
4. RR-
5. FL+
6. RL+
7. FL-
8. RL-
9. PKB
10. PULSE
11. REV
12. ILM
13. AANT
14. ACC
15. GND
16. BUP

AV IN/OUT

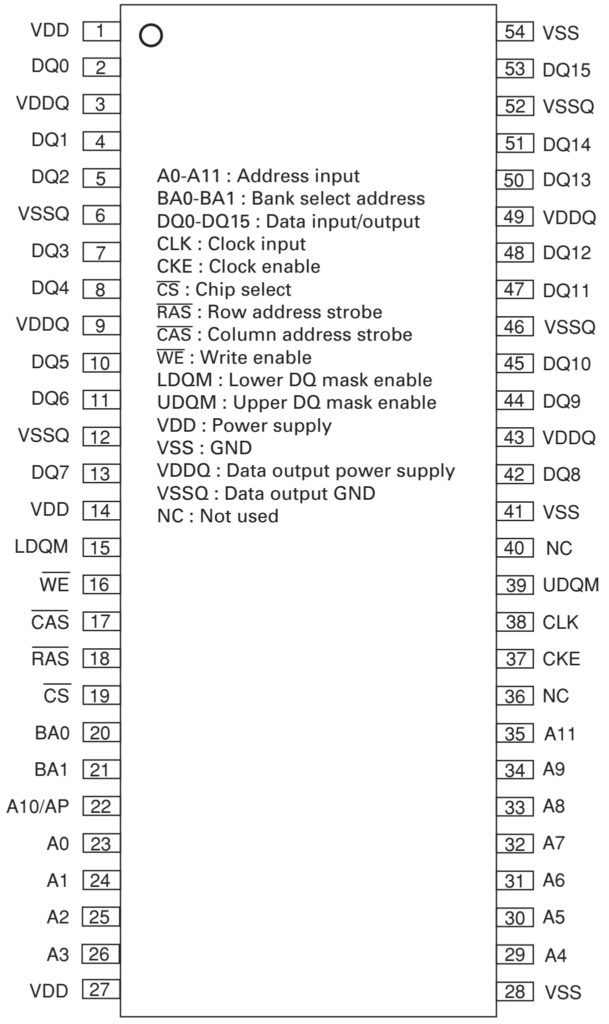


1. TELMUTE
2. NC(Reserved?)
3. RR
4. NC
5. RL
6. REARGND
7. FR
8. NC
9. FL
10. FRONTGND
11. SWR
12. BREM
13. SWL
14. SWGND
15. VTR1R
16. VTR1RGND
17. VTR1L
18. VTR1LGND
19. VTR1V
20. VTR1VGND
21. REARVOUT
22. GNDV
23. BCV
24. BCVGND

7.2 IC

K4S561632H-UL75
HY57V561620FLTP-H
UPD705103GM-180S1
TC74LCX08FTS1
TC7SH04FUS1
PD6336C
PEH103A
PEH077A
PEH104A
PEH078A
AK4388VT
MB86291APFVS-G-DL
TC7WH32FU
BD5335FVE
PE5580A
PE5581A
BD3931HFP
S-814A50AUC-BDO
UPD4723GSS1
TPS5120DBT
UPB1027GS
PEH100A8
PEH101A8
PD3390A
LC72720YVSS1
ADC12H034CIMSAS1
BA00CCWCP-V5
BA00CCWFP
NJM2505F
BA4558RFVM
PAL007C
RB5P0090M
TC74VHC221AFTS1
GP1UX51RK
PE5584A
S-93C46BR0I-J8
PD6567A
LZ9FE30
S-80859CNNB-B9K
BD9851EFV
EDS1232AATA-75
PCM1753DBQ
NJM2880U1-05
TC74LCX16373FT
CWW1423
CWW1424
MN2DS0016
BD7996EFV

K4S561632H-UL75



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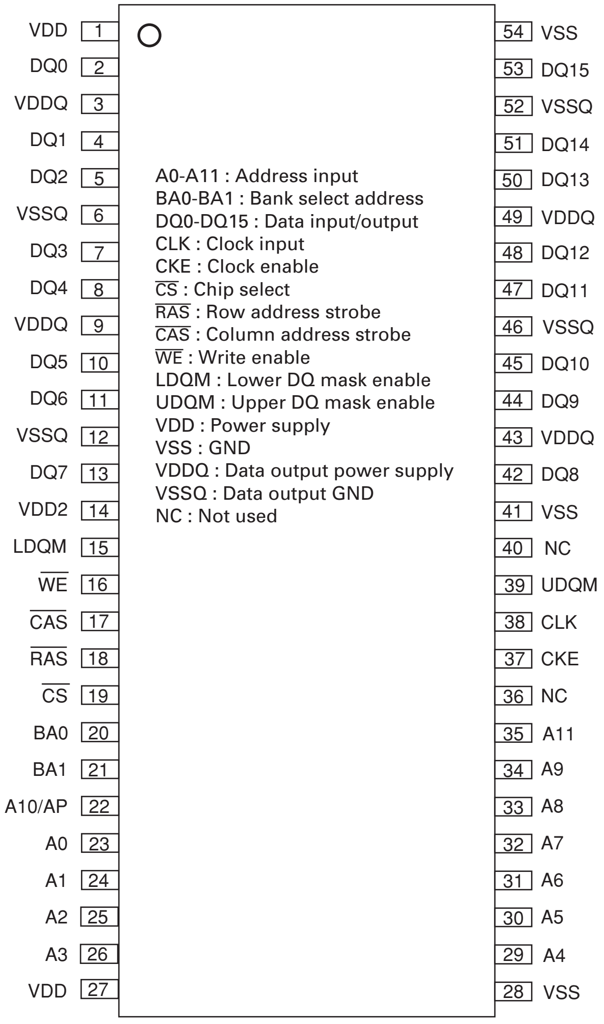
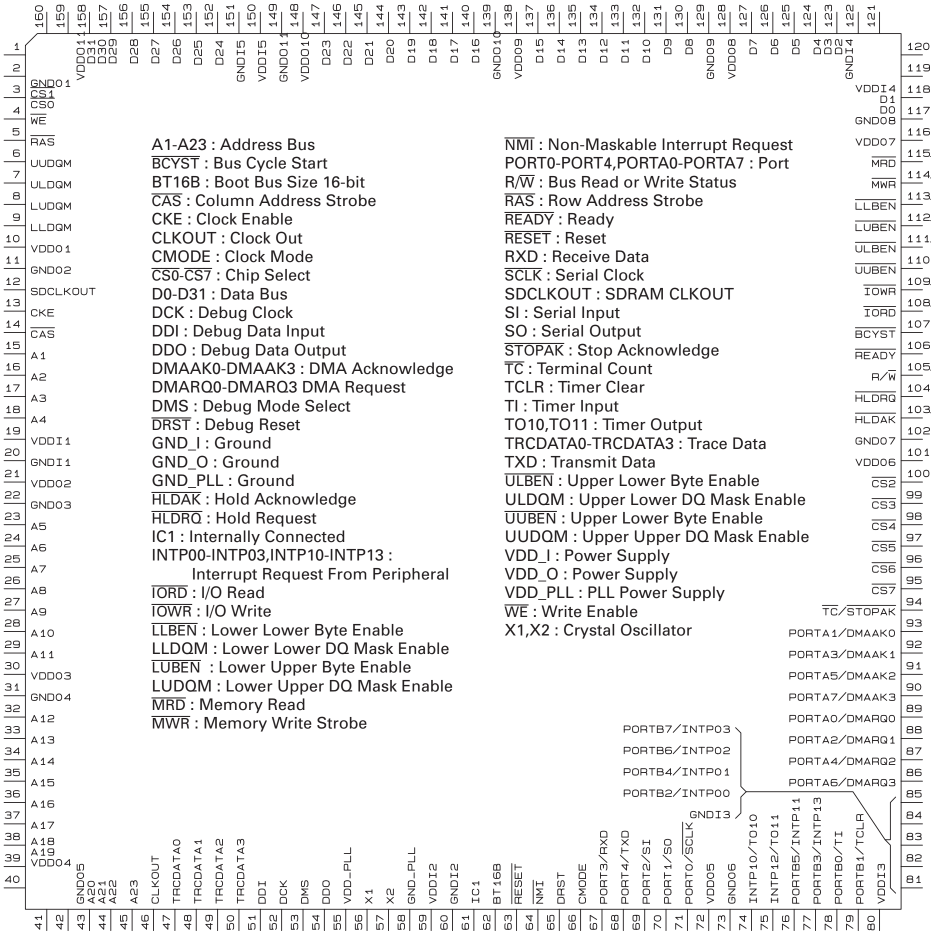
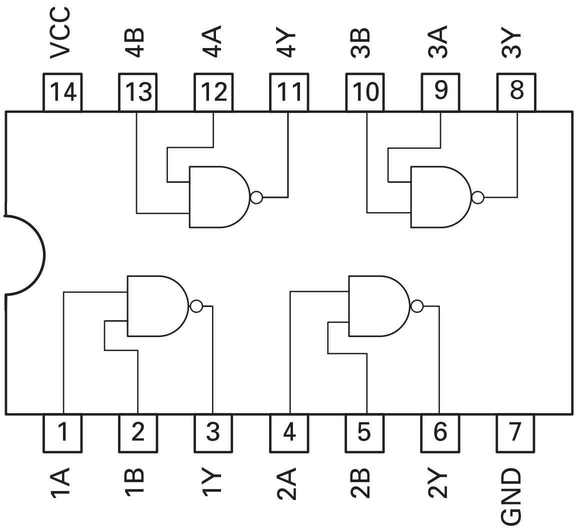


UPD705103GM-180S1

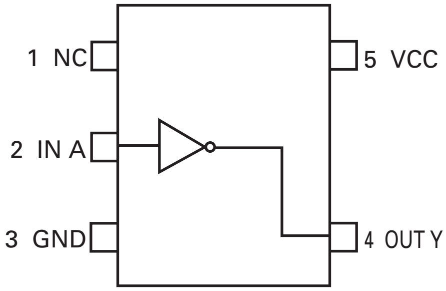


A1-A23 : Address Bus
BCYST : Bus Cycle Start
BT16B : Boot Bus Size 16-bit
CAS : Column Address Strobe
CKE : Clock Enable
CLKOUT : Clock Out
CMODE : Clock Mode
CS0-CS7 : Chip Select
D0-D31 : Data Bus
DCK : Debug Clock
DDI : Debug Data Input
DDO : Debug Data Output
DMAAK0-DMAAK3 : DMA Acknowledge
DMARQ0-DMARQ3 DMA Request
DMS : Debug Mode Select
DRST : Debug Reset
GND_I : Ground
GND_O : Ground
GND_PLL : Ground
HLDAK : Hold Acknowledge
HLDRQ : Hold Request
IC1 : Internally Connected
INTP00-INTP03,INTP10-INTP13 : Interrupt Request From Peripheral
IORD : I/O Read
IOWR : I/O Write
LLBEN : Lower Lower Byte Enable
LLDQM : Lower Lower DQ Mask Enable
LUBEN : Lower Upper Byte Enable
LUDQM : Lower Upper DQ Mask Enable
MRD : Memory Read
MWR : Memory Write Strobe
NMI : Non-Maskable Interrupt Request
PORT0-PORT4,PORTA0-PORTA7 : Port
R/W : Bus Read or Write Status
RAS : Row Address Strobe
READY : Ready
RESET : Reset
RXD : Receive Data
SCLK : Serial Clock
SDCLKOUT : SDRAM CLKOUT
SI : Serial Input
SO : Serial Output
STOPAK : Stop Acknowledge
TC : Terminal Count
TCLR : Timer Clear
TI : Timer Input
TO10,TO11 : Timer Output
TRCDATA0-TRCDATA3 : Trace Data
TXD : Transmit Data
ULBEN : Upper Lower Byte Enable
ULDQM : Upper Lower DQ Mask Enable
UUBEN : Upper Lower Byte Enable
UUDQM : Upper Upper DQ Mask Enable
VDD_I : Power Supply
VDD_O : Power Supply
VDD_PLL : PLL Power Supply
WE : Write Enable
X1,X2 : Crystal Oscillator

TC74LCX08FTS1



TC7SH04FUS1



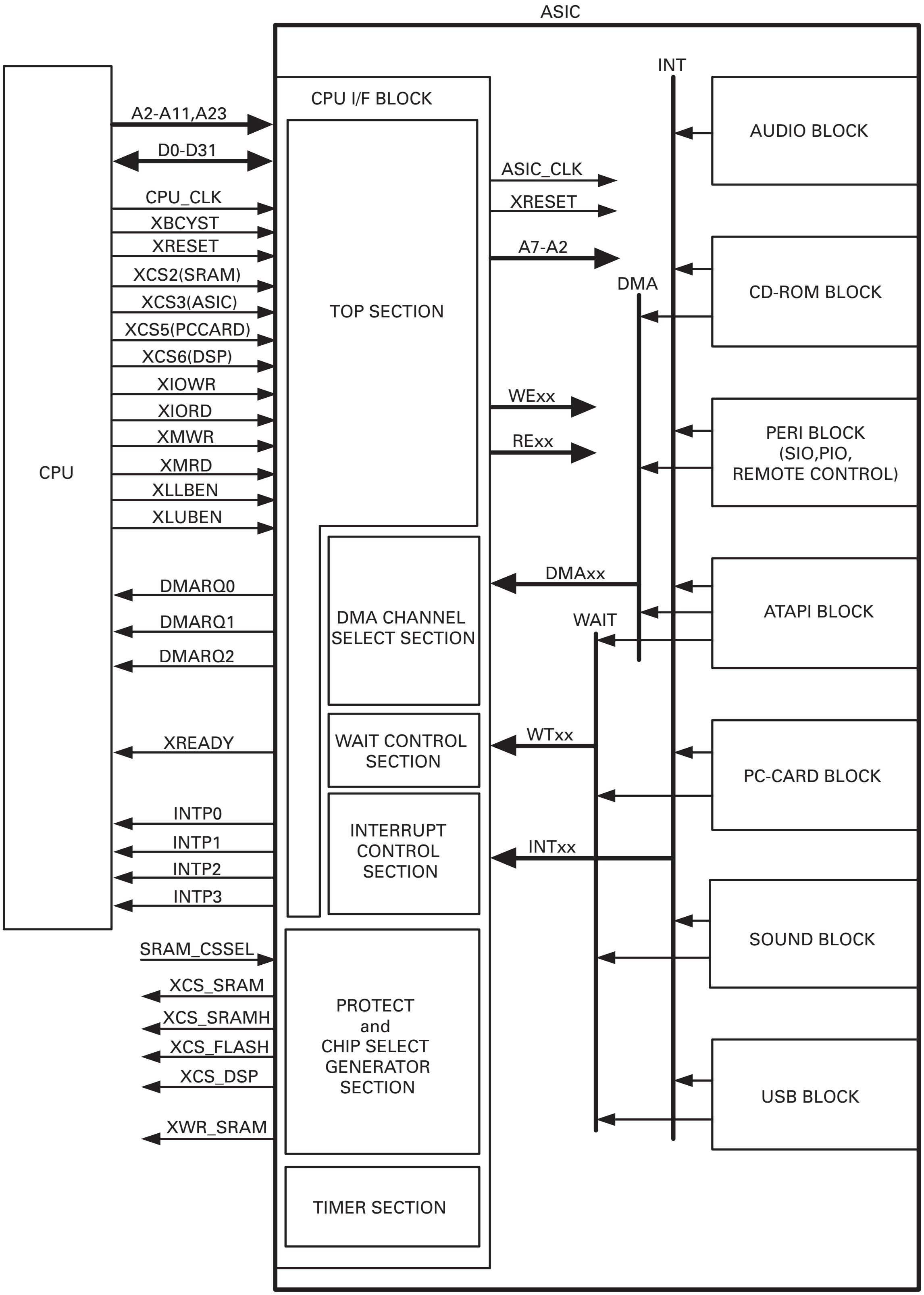
PD6336C

● Pin Arrangement Chart

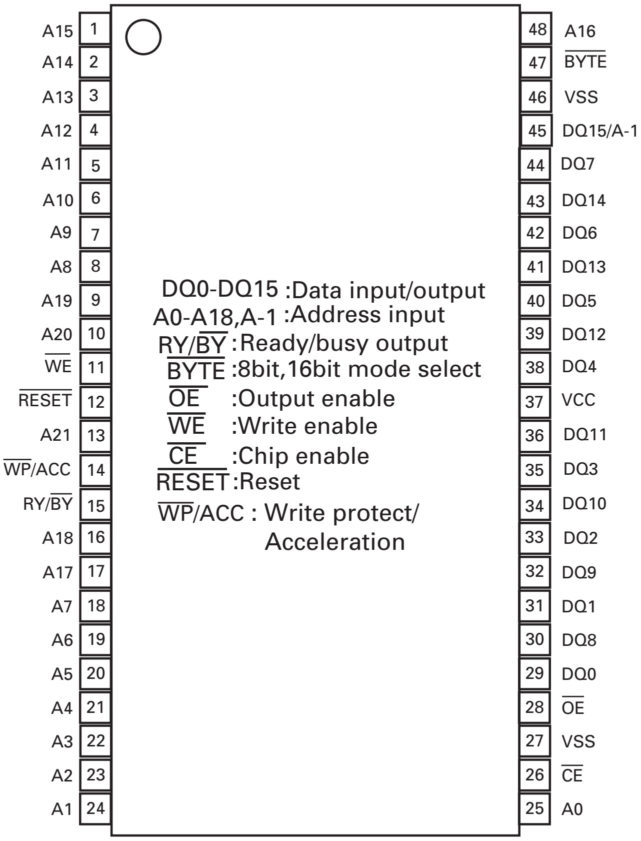
1	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64
2	85	160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145	144	143	142	63
3	86	161	228	227	226	225	224	223	222	221	220	219	218	217	216	215	214	213	212	141	62
4	87	162	229	288	287	286	285	284	283	282	281	280	279	278	277	276	275	274	211	140	61
5	88	163	230															273	210	139	60
6	89	164	231															272	209	138	59
7	90	165	232															271	208	137	58
8	91	166	233															270	207	136	57
9	92	167	234															269	206	135	56
10	93	168	235															268	205	134	55
11	94	169	236							TOP VEIW								267	204	133	54
12	95	170	237															266	203	132	53
13	96	171	238															265	202	131	52
14	97	172	239															264	201	130	51
15	98	173	240															263	200	129	50
16	99	174	241															262	199	128	49
17	100	175	242															261	198	127	48
18	101	176	243															260	197	126	47
19	102	177	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	196	125	46
20	103	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	124	45
21	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	44
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43

VSS	PIO27	DSP_BCLKI	PIO25	PIO24	PIO22	OVDD3	DSP_BDI	DSP_BFSI	DSP_XHINT	DSP_HRDY	OVSS6	DSP_BFSO	DSP_BCLKO	XCS_SRAMH	OVDD2	DSP_XRS	DSP_ATTCNT	D31	CD_MCLK	ADC_GCNT2	VSS
PIO29	PIO28	PIO26	D4	D6	OVSS7	D10	XCS_DSP	D14	PIO23	D18	D20	DSP_BDO	D24	PIO_OUT	OVSS5	TEST1	CD_LRCLK	CD_BLK	ADC_GCNT0	ADC_GCNT1	ADC_DATA
USBXPWREN	XCS_FLASH	D2	D3	D5	D8	D9	D12	D13	D16	D17	D19	D22	D23	D26	D27	D29	D30	A2	A3	ADC_BCLK	ADC_LRCLK
USBXOVRCUR	D0	D1	VSS	VDD	D7	VDD	D11	VSS	D15	VDD	VDD	D21	VSS	D25	VDD	D28	VSS	VSS	A4	ADC_MCLK	TEST4
UVD1M	XMRD	XMWR	VSS															VDD	A5	A6	EXTAL1
UVD1P	USBPWREN	XLLBEN	XLUBEN															VPDP	A7	A8	OVSS4
UVD2M	XIOWR	XIORD	VDD															VDD	A9	A10	XTAL1
UVD2P	NC	NC	NC															A11	A12	TEST2	TEST3
USBOVRCUR	NC	NC	VSS															VSS	PC_READY	DAC_MCLK	DAC_LRCLK
USB_CLK	NC	NC	NC															PC_XVS2	PC_RESET	DAC_BCLK	DAC_DATA
XCS_SRAM	XREADY	XBCYST	VDD							TOP VEIW								VDD	PC_WXT	PC_XREG	PIO21
XWR_SRAM	SRAM_CSSEL	XCS2	VDD															VDD	PC_BVD2	PC_A0	OVSS3
PIO31	PIO30	XCS3	XCS5															PC_BVD1	PC_WP	PIO20	CD_DATA
IR_RX	XCS6	DREQ0	VSS															VSS	PC_XCD2	PIO19	PIO18
TEST0	XTST	DREQ1	DREQ2															PC_XCD1	PC_XCE1	PIO17	PIO16
XTAL0	SMCK	INT3	VDD															VDD	PC_XCE2	PIO15	PIO14
MST	XSM	INT2	INT1															PC_XOE	PC_XVS1	PIO13	PIO12
EXTAL0	GDC_WT	INT0	VDD															VSS	PC_XIORD	PIO11	PIO10
UART9_TXD	UART9_RXD	ATA_DA0	VSS	VSS	ATA_XDIOR	VDD	ATA_DD1	VSS	ATA_DD5	VDD	VDD	ATA_DD10	VSS	ATA_DD14	VDD	ATA_XCS0	VDD	VSS	PC_XIOWR	PIO9	PIO8
UART8_TXD	UART8_RXD	ATA_DA1	ATA_INT	ATA_XDMACK	ATA_IORDY	ATA_DMARQ	ATA_DD0	ATA_DD3	ATA_DD4	ATA_DD7	ATA_DD8	ATA_DD9	ATA_DD12	ATA_DD13	ATA_DA2	ATA_XCS1	PC_XPWR	PC_XUBUF	PC_XWE	PIO7	PIO6
UART7_TXD	UART7_RXD	UART6_RXD	OVSS0	UART4_RXD	XRESET	ATA_XDIOW	UART3_RXD	ATA_DD2	UART1_RXD	ATA_DD6	ATA_XRESET	UART_XDCD	ATA_DD11	UART_XRI	ATA_DD15	UART1_XDTR	ATA_DIR	PC_XLBUF	PIO2	PIO5	PIO4
VSS	UART6_TXD	UART5_RXD	UART5_TXD	UART4_TXD	UART3_TXD	OVDD0	UART2_TXD	UART2_RXD	UART1_TXD	A23	CPU_CLK	OVSS1	UART1_XCTS	UART_XDSR	OVDD1	UART1_XRTS	PIO0	PIO1	OVSS2	PIO3	VSS

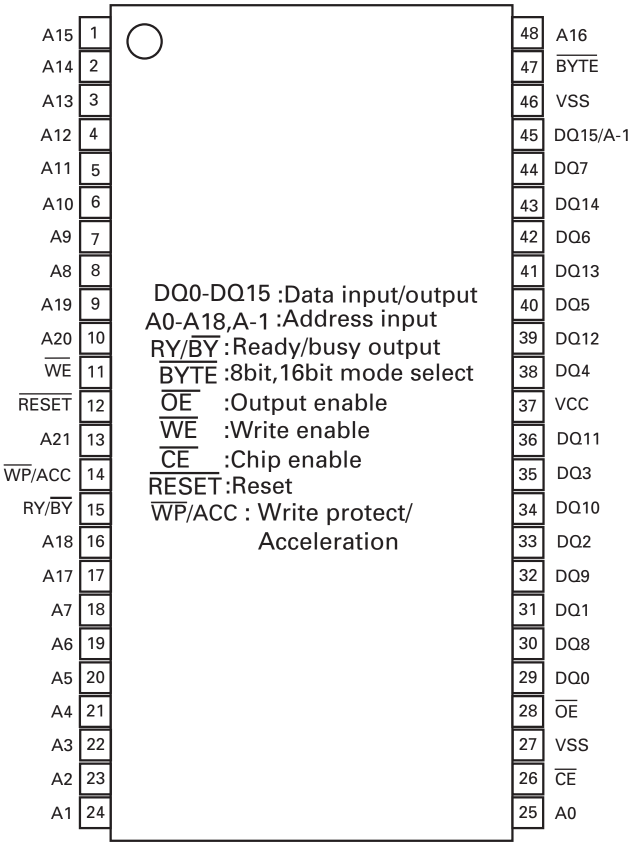
Block Diagram Chart



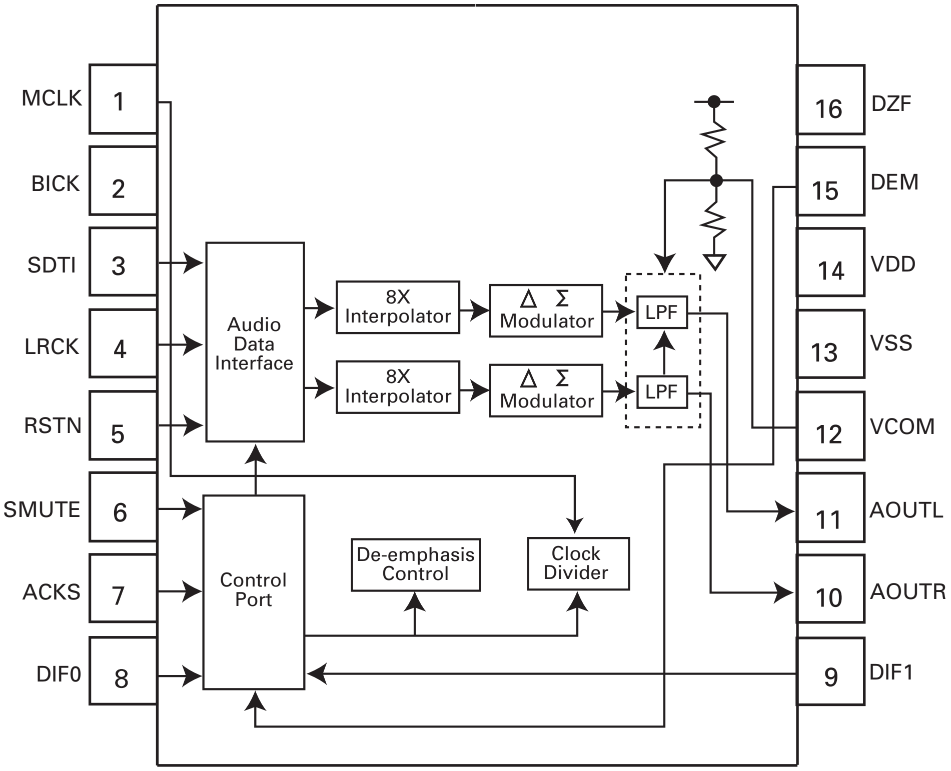
PEH103A (UC)
PEH077A (EW5)


1 A15
2 A14
3 A13
4 A12
5 A11
6 A10
7 A9
8 A8
9 A19
10 A20
11 $\overline{\text{WE}}$
12 $\overline{\text{RESET}}$
13 A21
14 $\overline{\text{WP}}$/ACC
15 RY/$\overline{\text{BY}}$
16 A18
17 A17
18 A7
19 A6
20 A5
21 A4
22 A3
23 A2
24 A1
48 A16
47 $\overline{\text{BYTE}}$
46 VSS
45 DQ15/A-1
44 DQ7
43 DQ14
42 DQ6
41 DQ13
40 DQ5
39 DQ12
38 DQ4
37 VCC
36 DQ11
35 DQ3
34 DQ10
33 DQ2
32 DQ9
31 DQ1
30 DQ8
29 DQ0
28 $\overline{\text{OE}}$
27 VSS
26 $\overline{\text{CE}}$
25 A0
DQ0-DQ15 :Data input/output
A0-A18,A-1 :Address input
RY/$\overline{\text{BY}}$:Ready/busy output
$\overline{\text{BYTE}}$:8bit,16bit mode select
$\overline{\text{OE}}$:Output enable
$\overline{\text{WE}}$:Write enable
$\overline{\text{CE}}$:Chip enable
$\overline{\text{RESET}}$:Reset
$\overline{\text{WP}}$/ACC : Write protect/ Acceleration

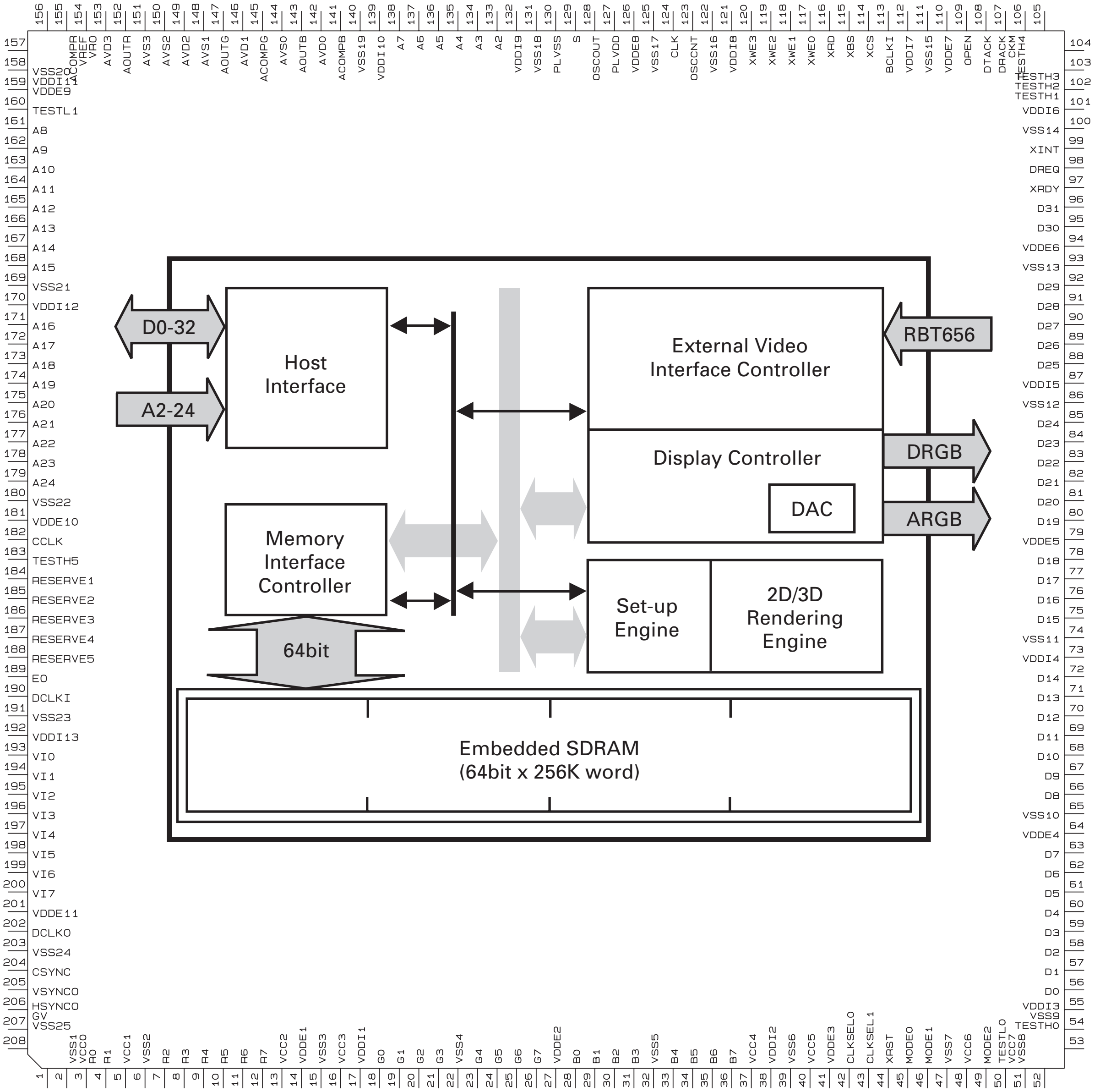
PEH104A (UC)
PEH078A (EW5)


1 A15
2 A14
3 A13
4 A12
5 A11
6 A10
7 A9
8 A8
9 A19
10 A20
11 $\overline{\text{WE}}$
12 $\overline{\text{RESET}}$
13 A21
14 $\overline{\text{WP}}$/ACC
15 RY/$\overline{\text{BY}}$
16 A18
17 A17
18 A7
19 A6
20 A5
21 A4
22 A3
23 A2
24 A1
48 A16
47 $\overline{\text{BYTE}}$
46 VSS
45 DQ15/A-1
44 DQ7
43 DQ14
42 DQ6
41 DQ13
40 DQ5
39 DQ12
38 DQ4
37 VCC
36 DQ11
35 DQ3
34 DQ10
33 DQ2
32 DQ9
31 DQ1
30 DQ8
29 DQ0
28 $\overline{\text{OE}}$
27 VSS
26 $\overline{\text{CE}}$
25 A0
DQ0-DQ15 :Data input/output
A0-A18,A-1 :Address input
RY/$\overline{\text{BY}}$:Ready/busy output
$\overline{\text{BYTE}}$:8bit,16bit mode select
$\overline{\text{OE}}$:Output enable
$\overline{\text{WE}}$:Write enable
$\overline{\text{CE}}$:Chip enable
$\overline{\text{RESET}}$:Reset
$\overline{\text{WP}}$/ACC : Write protect/ Acceleration

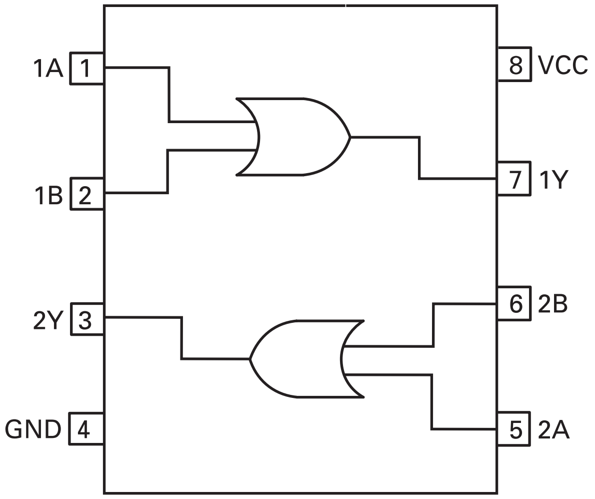
AK4388VT



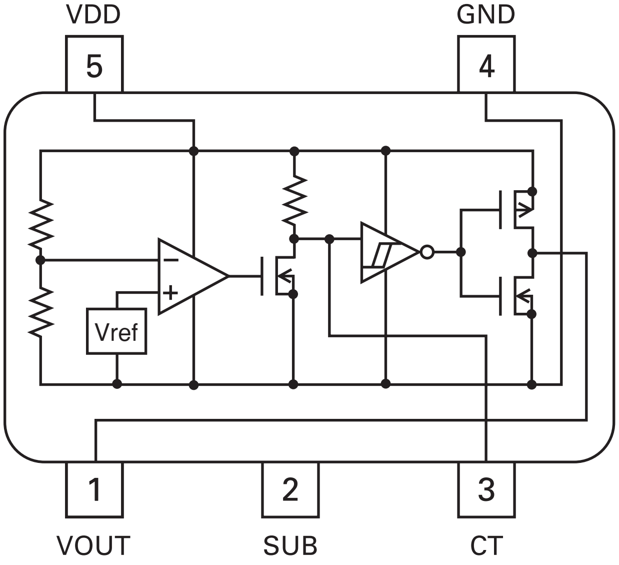
MB86291APFVS-G-DL



TC7WH32FU



BD5335FVE



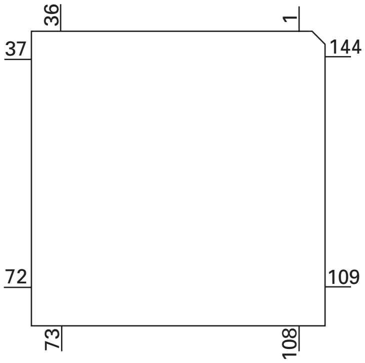
Pin Functions (UC : PE5580A, EW5 : PE5581A)

Pin No.	Pin Name	I/O	Function and Operation
1	SIMUKE3	I	Type input
2	SIMUKE0	I	Type input
3	SIMUKE1	I	Type input
4	SIMUKE2	I	Type input
5	GND0		GND
6	ROMCS	O	ROM collection chip select output
7	ROMCLK	O	ROM collection clock output
8	ROMDATA	I/O	ROM collection data input/output
9	VDT	O	E. volume data output
10	VCK	O	E. volume data clock output
11	MUTEVO	O	E. volume mute output
12	VST	O	E. volume strobe output
13	ROT1	I	Rotary encoder input
14	ROT2	I	Rotary encoder input
15-21	NC		Not used
22	VDD0		Power supply
23	RDT	I	RDS : Data input (EW model)
24	RDS57K	I	RDS : 57 kHz pulse count input (EW model)
25	RDSLK	I	RDS : Lock signal input (EW model)
26-28	NC		Not used
29	$\overline{\text{WCONT}}$	I	Wired remote control SEL input
30-32	NC		Not used
33	DALMON	O	For consumption current reduction output
34	DD8CONT	O	MS5 power supply control output
35	NC		Not used
36	CLKOUT	O	System clock output
37	GND0		GND
38	CPUREG		CPU regulator connection
39	VDD0		Power supply
40	RESET	I	System reset input
41	VPP		Flash ROM writing voltage supply
42	FLASH1	I	Flash ROM writing data input
43	FLASH2	O	Flash ROM writing data output
44	FLASH3	O	Flash ROM writing clock output
45	LDET	I	RDS : PLL lock signal input (EW model)
46	TUNDI	I	FM/AM tuner data input
47	TUNDO	O	FM/AM tuner data output
48	TUNCLK	O	FM/AM tuner clock output
49-51	NC		Not used
52	MUTENS		Not used
53	NOSELL	O	L ch guide mute control output
54	NOSELR	O	R ch guide mute control output
55	NC		Not used
56	PGSEL		Not used
57	RCK	I	RDS : Data clock input (EW model)
58	TELIN	I	Mobile phone mute input
59	VPPON	O	Voltage supply control output
60	VDD1		Power supply
61	SREMOT	O	Control output for system remote
62	SYSPWR	O	System power supply control output
63	FANCONT	O	Fan output control output
64	ANTON	O	Control output for auto antenna
65	XVMUTE	O	Composition mute output
66	NC		Not used
67	FCONT	O	Control output for DD converter
68	NC		Not used
69	$\overline{\text{BLSENS}}$	I	B. up power supply sense input
70	XT2		Not used
71	XT1		Not used
72	GND2		GND
73	X1		Crystal oscillating element connection
74	X2		Crystal oscillating element connection
75	NMI		Not used

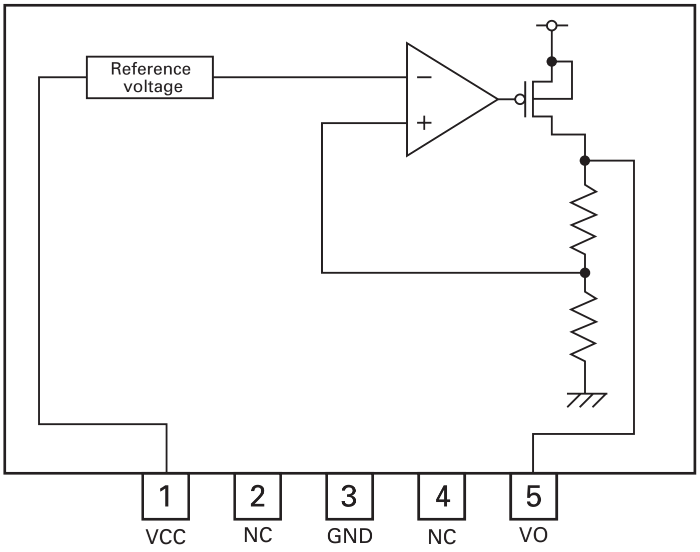
Pin No.	Pin Name	I/O	Function and Operation
76	ACONTA	O	Audio switch control output
77	ACONTB	O	Audio switch control output
78	DRAMPW	O	DRAM power supply control output
79	CCON	O	Navigation power supply control output
80	SIMUKE4	I	Type input
81-83	NC		Not used
84	VSEL1	O	Picture selector control output 1
85	VSEL2	O	Picture selector control output 2
86	BCVSW	O	Picture selector control output (Back camera)
87	NC		Not used
88	ASENBO	O	ASENBO output for IP-BUS output
89	IPPW	O	IP-BUS driver power supply control output
90	RX	I	IP-BUS data input
91	TX	O	IP-BUS data output
92	GND1		GND
93-95	NC		Not used
96	ASENS	I	ACC power supply sense input
97	DEQON	O	DEQ connect enable output
98	MUTE	O	Mute output
99	GUIDEMUTE		Not used
100	TUNCE1	O	Chip enable output for FM/AM tuner
101	TUNCE2	O	Chip enable output for FM/AM tuner
102	VDD2		Power supply
103	CPUWDT	I	Watch dog timer input
104	RSTOUT	O	RSTOUT output
105	XCCSTBY	I	OFF processing completion input
106	RST3		Not used
107	MTOSYS	I	Monitor microcomputer UART communication (Reception) input
108	SYSTOM	O	Monitor microcomputer UART communication (Transmission) output
109	SWACPW	O	Monitor microcomputer power supply control output
110	PRGON	I	System microcomputer self programing mode ON input
111	RXIPOD	I	iPod : UART communication input
112	TXIPOD	O	iPod : UART communication output
113	IRQPWR	O	B. up OFF output
114	RSTOUT		NC
115	NC		NC
116	PSENS	I	iPod : Connect sense input (communication)
117	CTOSYS	I	Navigation UART communication (Reception) input
118	SYSTOC	O	Navigation UART communication (Transmission) output
119	CPRESET		Not used
120	OPTON	O	Optical digital output
121,122	NC		Not used
123	PID	O	iPod : Communication mode notification output
124	PPW	O	iPod : Power supply control output
125	PSENSG	I	iPod : Connect sense input (connector)
126	ILLSNS	I	Illumination sense input
127	CPREADY		Not used
128	VDD1		Power supply
129	PBSNS	I	Parking brake sense input
130	BKSNS	I	Back gear sense input
131	GND1		GND
132	OPTSNS	I	Optical cable detection input
133	DVEJKY	I	MS3 eject key input
134	NC		Not used
135	TUNSL	I	Signal level inptut for FM/AM tuner
136	BLEVSNS		Not used
137	WREMIN	I	Wired remote control AD input
138	REVMDL	I	Model type reversing switch input
139	FWSNS	I	iPod : Control input
140	NC		Not used
141	TESTIN	I	Testmode input
142	TIMEOUT	I	Time out input
143	ADCVDD		A/D converter power supply

Pin No.	Pin Name	I/O	Function and Operation
144	ADCGND		A/D converter GND

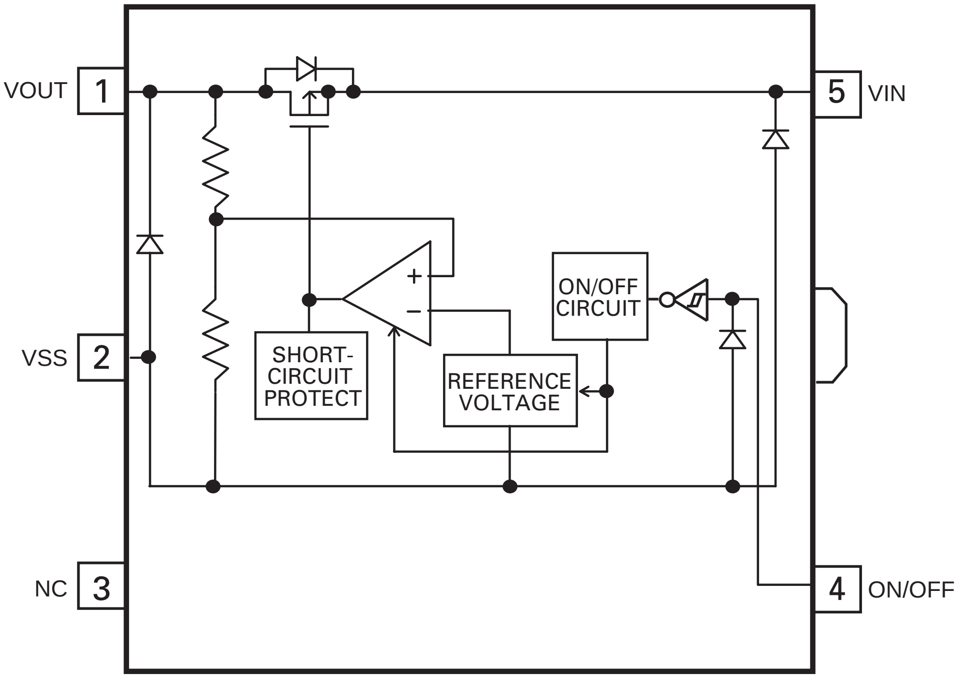
PE5580A (UC)
PE5581A (EW5)



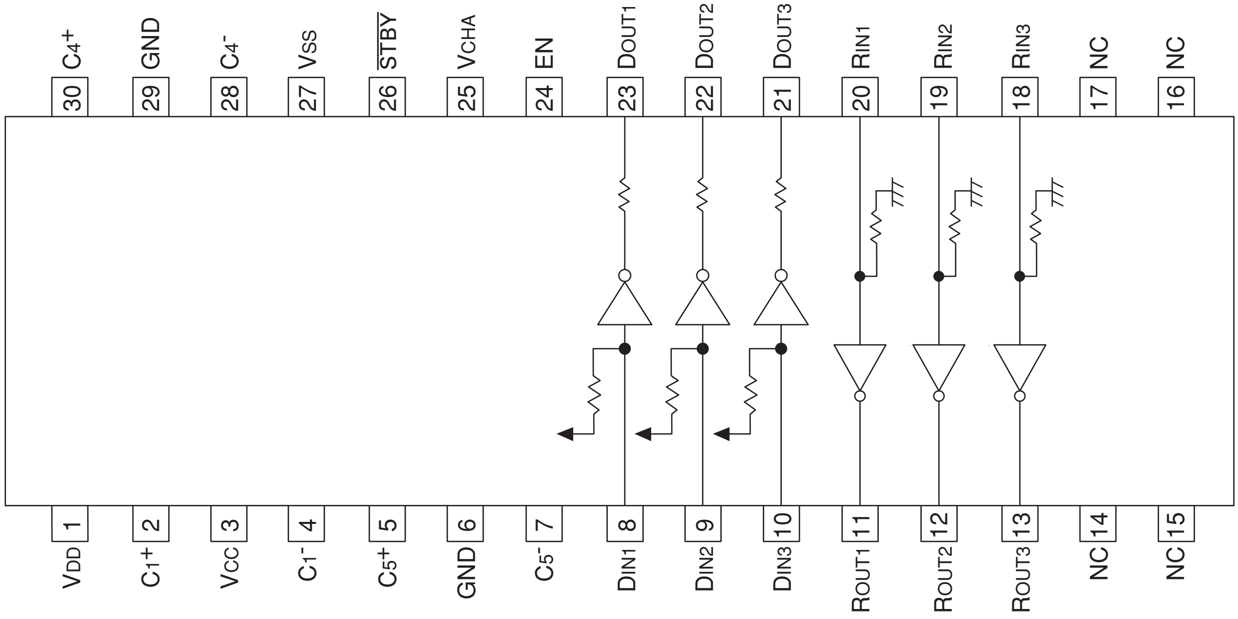
BD3931HFP



S-814A50AUC-BDO

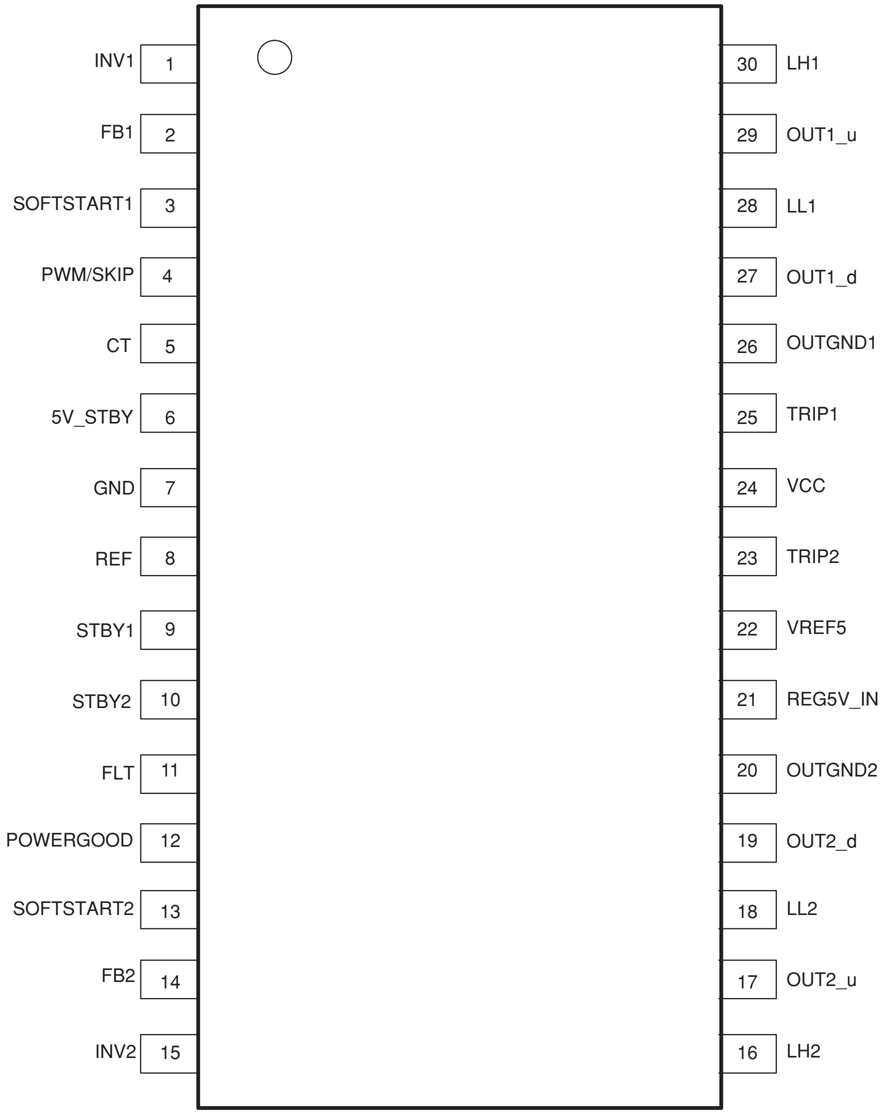


UPD4723GSS1

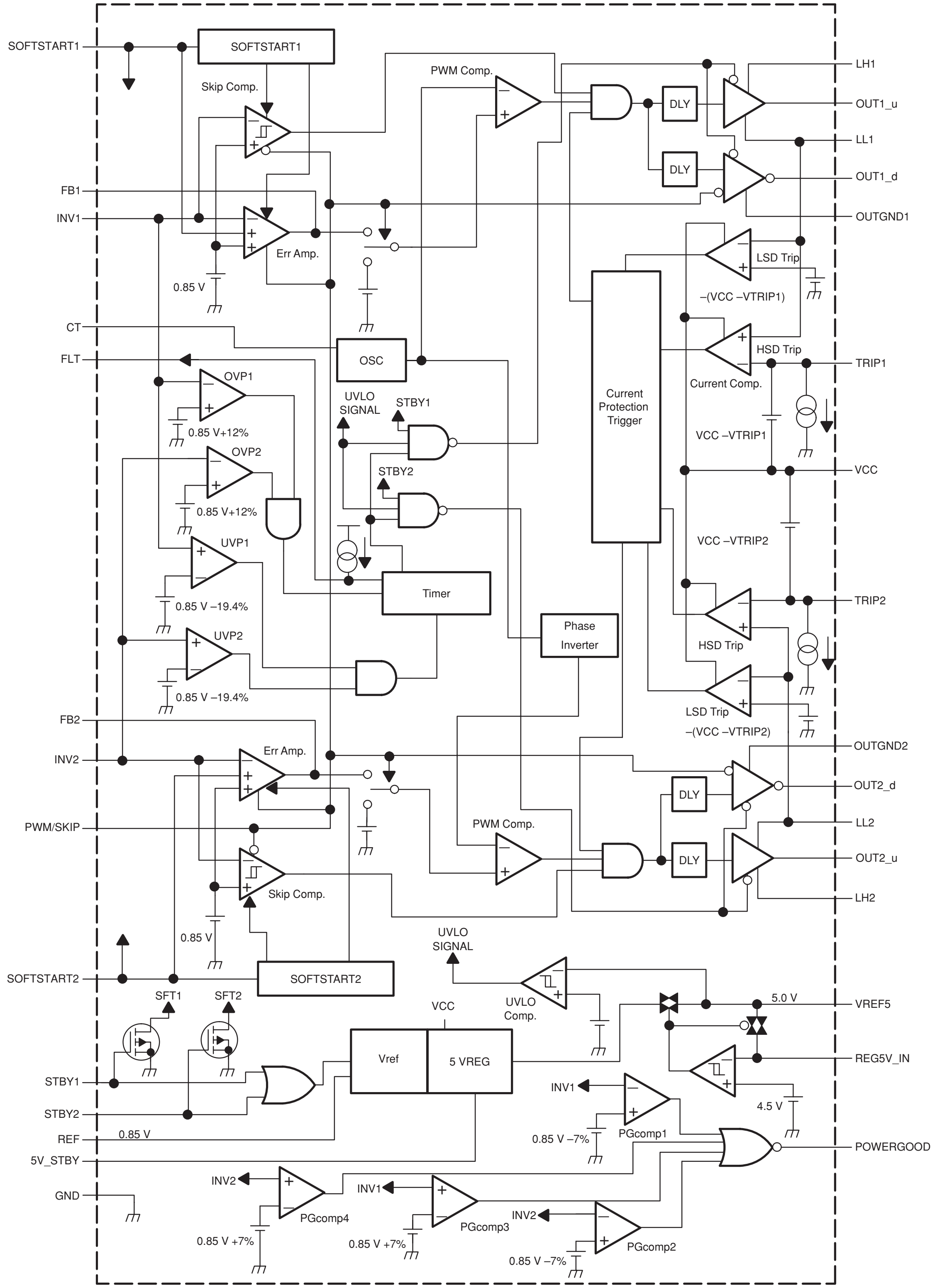


TPS5120DBT

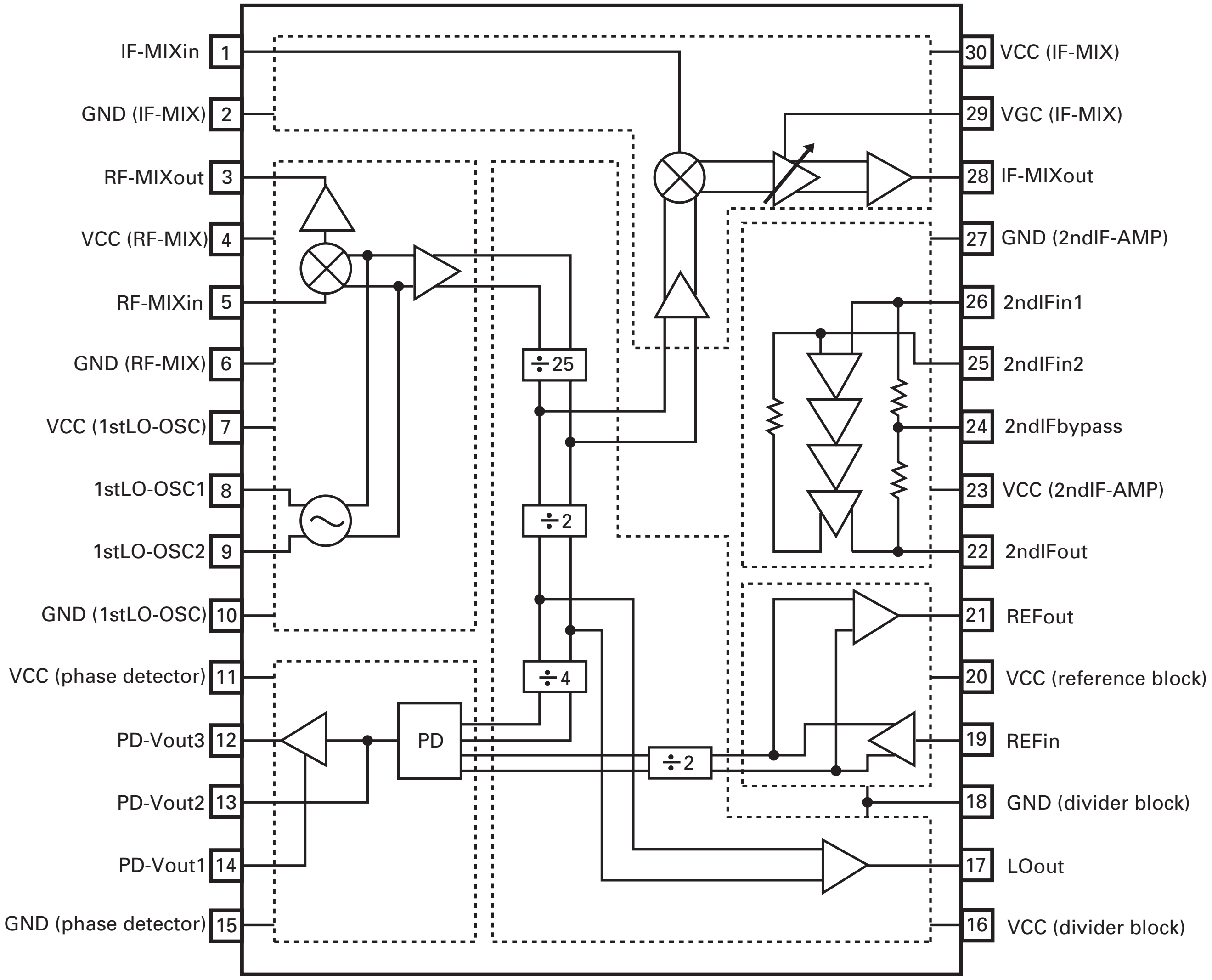
● Pin Arrangement Chart



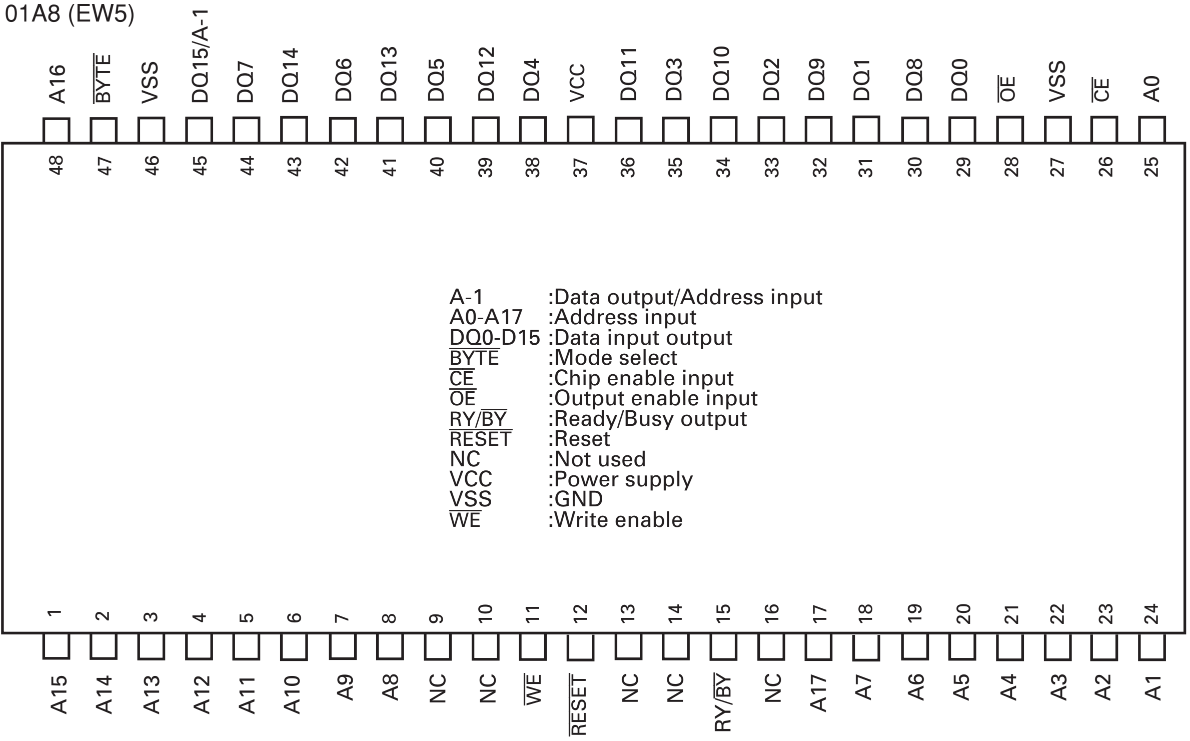
Block Diagram Chart



UPB1027GS



PEH100A8 (UC)
PEH101A8 (EW5)



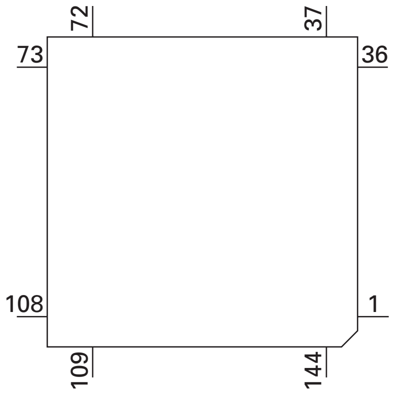
A-1 :Data output/Address input
A0-A17 :Address input
DQ0-D15 :Data input output
BYTE :Mode select
CE :Chip enable input
OE :Output enable input
RY/BY :Ready/Busy output
RESET :Reset
NC :Not used
VCC :Power supply
VSS :GND
WE :Write enable

●Pin Functions(PD3390A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	VCC0			Power supply (3.3V)
2	VSS0			GND
3	TXD2	I/O		SIO2 Transmission data input / output
4	RXD2	I/O		SIO2 Reception data input / output
5	TXD1	O	C	SIO1 Transmission data output
6	RXD1	I		SIO1 Reception data input
7	TXD0	O	C	SIO0 Transmission data output
8	RXD0	I		SIO0 Reception data input
9	SPEED	I		SP I/F input
10	ADCSB	O	C	AD I/F output
11	ADSCK	O	C	AD I/F output
12	ADTXD	O	C	AD I/F output
13	ADRXD	I		AD I/F input
14	ADSRX	I		AD I/F input
15	ADIO0	I/O		AD I/F input / output
16	ADIO1	I/O		AD I/F input / output
17	ADIO2	I/O		AD I/F input / output
18	VCC1			Power supply (3.3V)
19	VSS1			GND
20	PWM	O		PWM signal output
21	PLINT	I		PLL I/F input
22	PLCE	O	C	PLL I/F output
23	PLSCK	O	C	PLL I/F output
24	PLTX	O	C	PLL I/F output
25	PLRX	I		PLL I/F input
26	PLIO0	I/O		PLL I/F input / output
27	PLIO1	I/O		PLL I/F input / output
28	PLIO2	I/O		PLL I/F input / output
29	DDINT	I		DARC I/F input
30	DDCE	O	C	DARC I/F output
31	DDSCK	O	C	DARC I/F output
32	DDTX	O	C	DARC I/F output
33	DDRX	I		DARC I/F input
34	DDIO0	I/O		DARC I/F input / output
35	DDIO1	I/O		DARC I/F input / output
36	DDIO2	I/O		DARC I/F input / output
37	TIOA0	I/O		Parallel input / output
38	TIOA1	I/O		Parallel input / output
39	TIOB0	I/O		Parallel input / output
40	TIOB1	I/O		Parallel input / output
41	VCC2			Power supply (3.3V)
42	VSS2			GND
43-53	A19-9	I/O		Address bus input / output
54	VCC3			Power supply (3.3V)
55	VSS3			GND
56-64	A8-0	I/O		Address bus input / output
65	VCC4			Power supply (3.3V)
66	VSS4			GND
67-82	D0-15	I/O		Address bus input / output
83	VCC5			Power supply (3.3V)
84	VSS5			GND
85	WRHB	I/O		Upper data write strobe input / output
86	WRLB	I/O		Lower data write strobe input / output
87	RDB	I/O		Read data strobe input / output
88	CS2B	I/O		Chip select aria 1 for external storage input / output
89	CS0B	I/O		Chip select aria 0 for ROM input / output
90	VCC6			Power supply (3.3V)

Pin No.	Pin Name	I/O	Format	Function and Operation
91	VSS6			GND
92	TEST2			Test mode
93	CKOEB	I		CK output enable input
94	CK	O	C	CPU clock output
95	CS5B	O	C	DRAM low address strobe output
96	CS3B	O	C	DRAM column address strobe output
97	CS1B	O	C	DRAM column address upper byte strobe output
98	RTCVSS1			Power supply (3.3V)
99	SRAMB	I		Backup memory select input
100	STANBYB	I		Stand by signal input
101	RTCVSS0			GND
102	XRTCIN	I		Sub crystal oscillator input (RTC)
103	XRTCOUT	O	C	Sub crystal oscillator output (RTC)
104	RTCVCC			Power supply (3.3V)
105	PCKSEL0	I		Processor clock select input
106	PCKSEL1	I		Processor clock select input
107	CCKSEL	I		CRCK signal select input
108	CCKDIR	I/O		Carrier clock direct input / inverter amp output
109	CCKVCC			Power supply (3.3V)
110	CRCK	I		Carrier clock input
111	CCKGND			GND
112-118	PC0-6	I/O		Parallel input / output
119	NMI			Connect to VCC
120	RESETB	I		System reset input
121	MSTRSTB	I		Test reset input
122	TEST0	I		Test mode input
123	TEST1	I		Test mode input
124	REFSEL	I		GPS reference clock select input
125	REFCK	I		Reference clock input
126	VCC7			Power supply (3.3V)
127	VSS7			GND
128	XAUXIN	I		Sub crystal oscillator output input (AUX)
129	XAUXOUT	O	C	Sub crystal oscillator output (AUX)
130-133	PIN0-3	I		Parallel input
134-137	PIO4-7	I/O		Parallel input / output
138	TXD3	I/O		SIO3 Transmission data input / output
139	RXD3	I/O		SIO3 Reception data input / output
140	BOWWOWB	O	C	Watch dog timer output
141	IFDIR	I/O		IF direct input / IF inverter amp output
142	IFVCC			Power supply (3.3V)
143	IF	I		IF input
144	IFGND	I		IF amp GND input

PD3390A

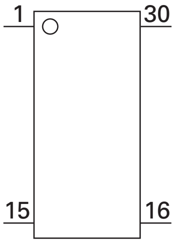


Format	Meaning
C	CMOS

● Pin Functions(LC72720YVSS1 : EW5)

Pin No.	Pin Name	I/O	Function and Operation
1	VREF	O	Reference voltage output
2	MPXIN	I	Base band (multiplexed) signal input
3	Vdda		Analog system power supply (+ 5 V)
4	NC		Not used
5	Vssa		Analog system GND
6	FLOUT	O	Sub carrier output (filter output)
7	CIN	I	Sub carrier input (comparator input)
8	NC		Not used
9	T1	I	Test input (connect to GND)
10	T2	I	Test input (stand-by control)
11	T3	O	RDS clock output
12	NC		Not used
13	T4	O	RDS data output
14	T5	O	Soft-decision control data output
15	XOUT	O	Crystal oscillator output
16	XIN	I	Crystal oscillator input
17	Vddd		Digital system power supply (+ 5 V)
18	Vssd		Digital system GND
19	NC		Not used
20	T6	O	Error status,regenerated carrier and error block count outputs
21	T7	O	Error correction status, SK detection and error block count outputs
22	SYNC	O	Block synchronization detection output
23	NC		Not used
24	RDS-ID	O	RDS detection output
25	DO	O	Data output
26	CL	I	Clock input
27	NC		Not used
28	DI	I	Data input
29	CE	I	Chip enable input
30	SYR	I	Synchronization and RAM address reset input

LC72720YVSS1 (EW5)



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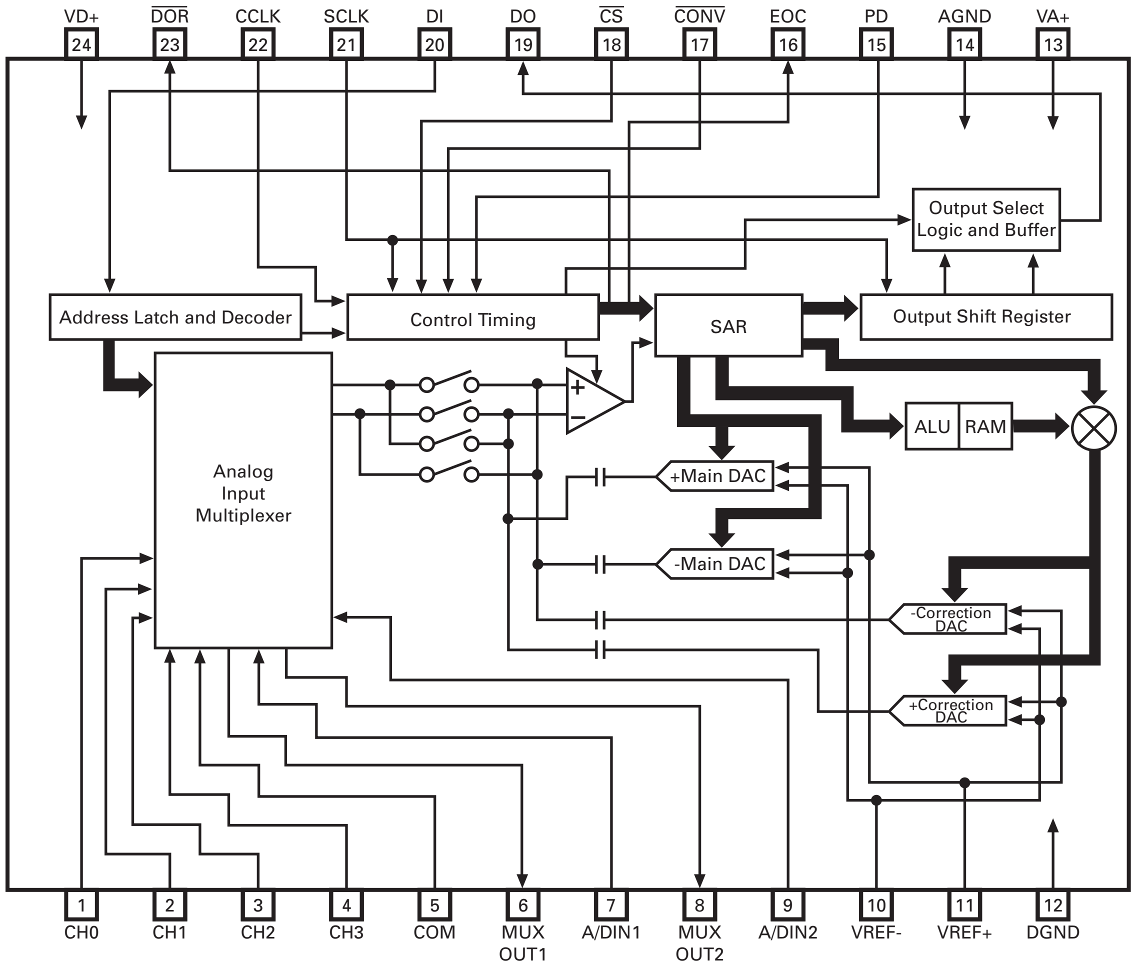

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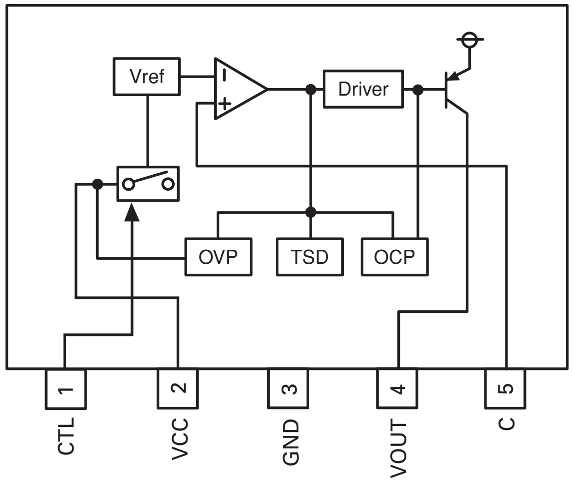

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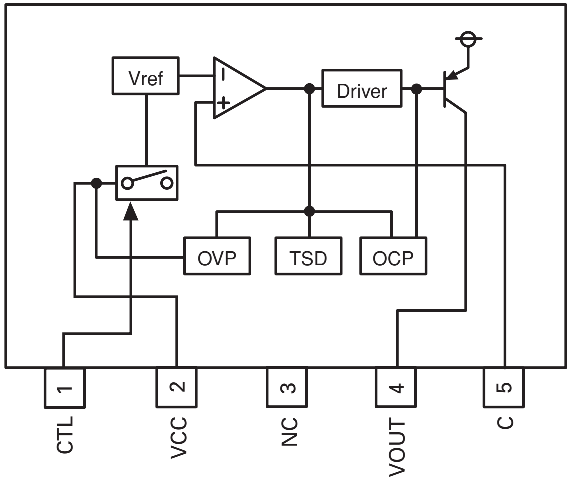

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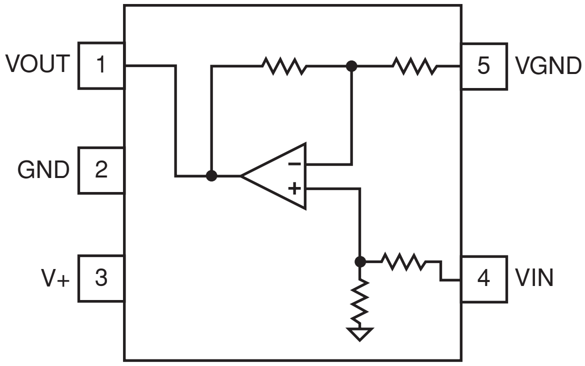

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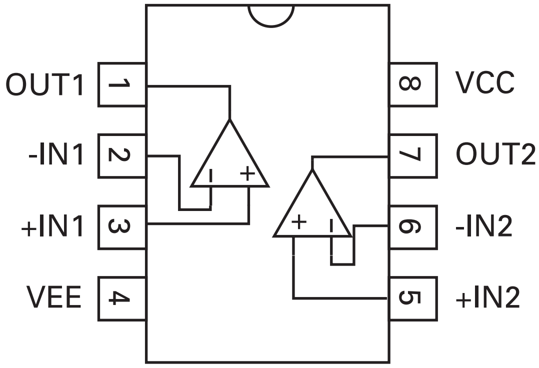

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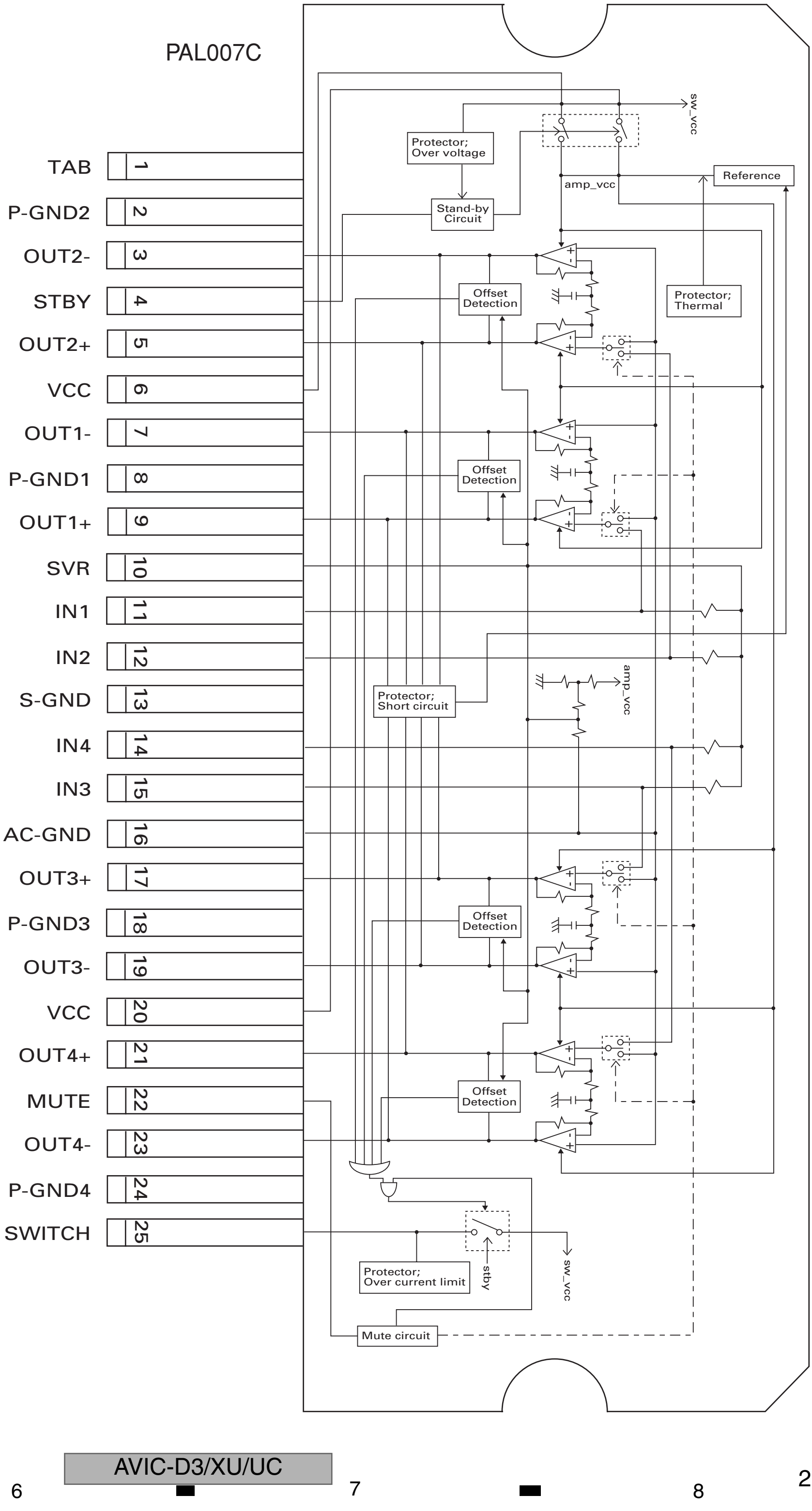
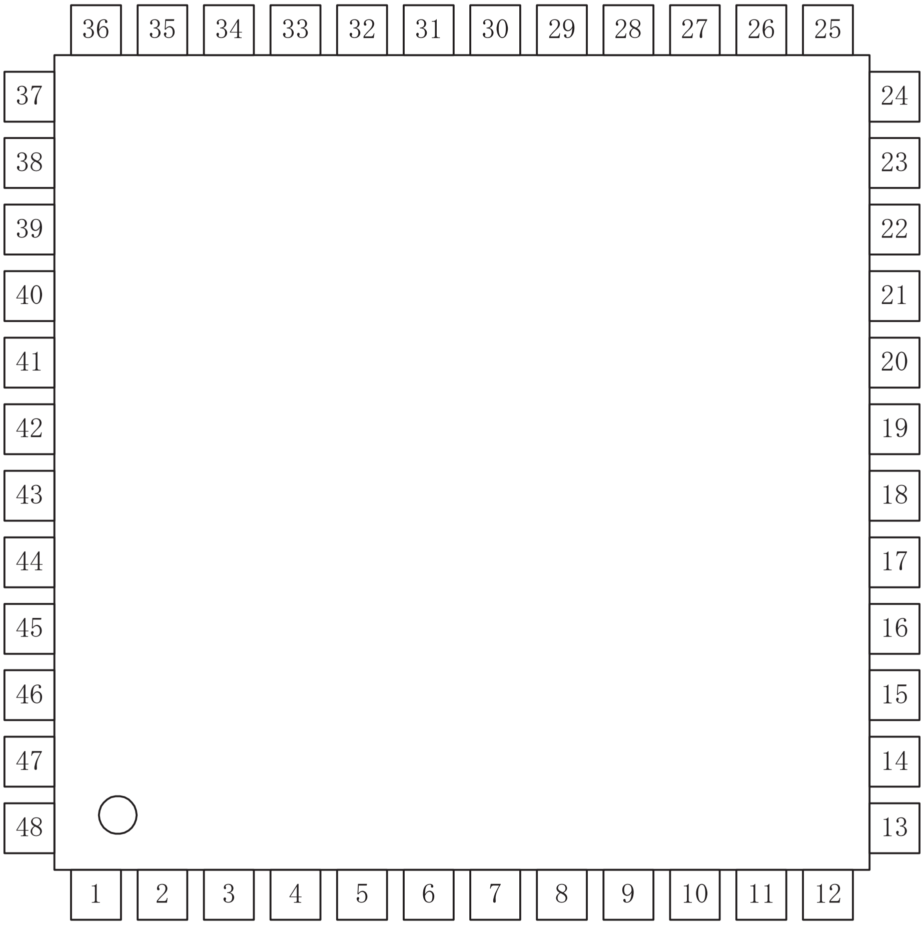


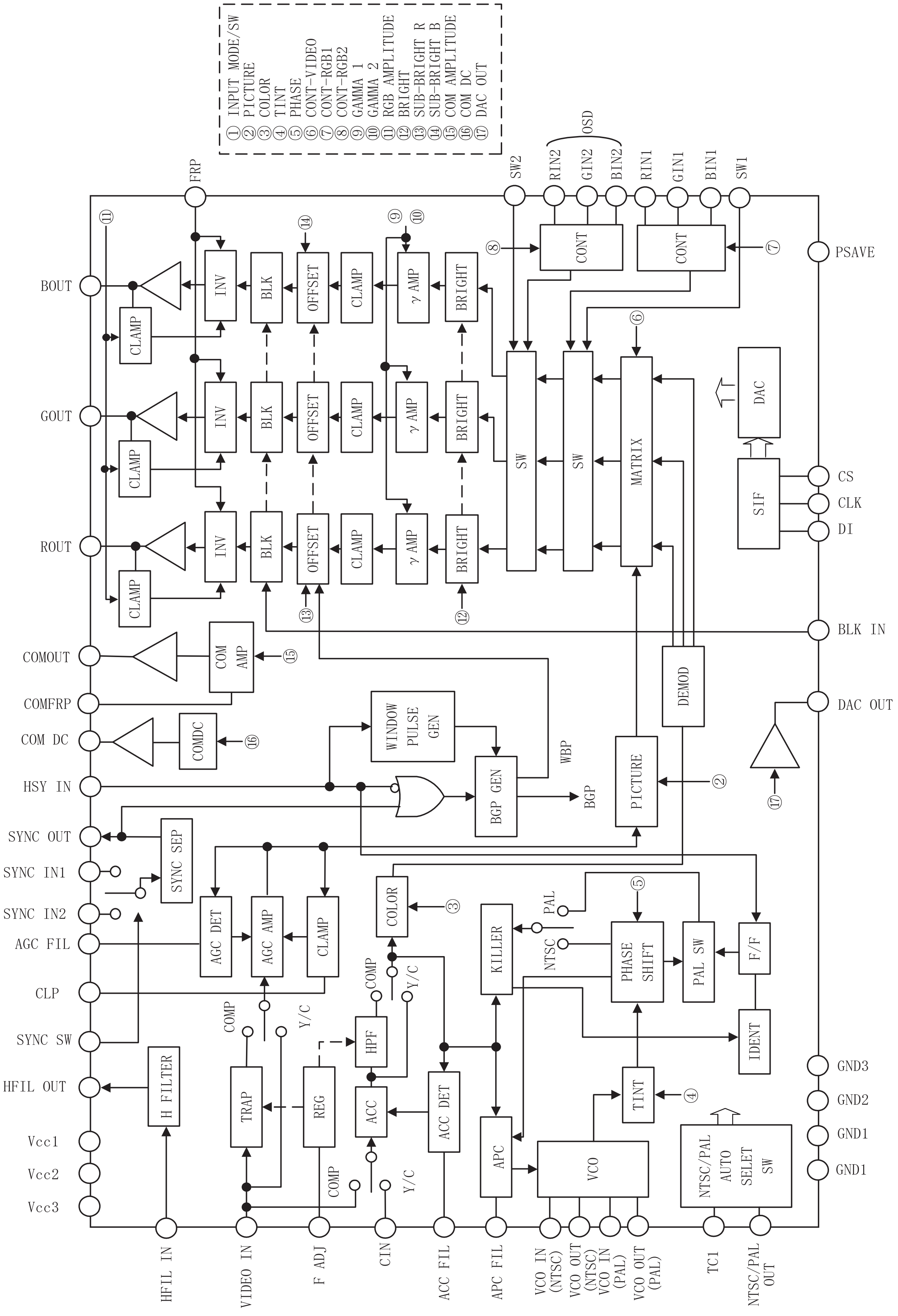
RB5P0090M

● Pin Arrangement Chart

Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name
1	HSY IN	17	GIN2	33	ROUT
2	SYNC OUT	18	RIN2	34	GOUT
3	SYNC IN2	19	HFIL IN	35	BOUT
4	SYNC IN1	20	VIDEO IN	36	Vcc2
5	HFIL OUT	21	AGC FIL	37	COM DC
6	SYNC SW	22	CLP	38	GND3
7	GND1	23	CIN	39	COMOUT
8	F ADJ	24	ACC FIL	40	Vcc3
9	Vcc1	25	TC1	41	COM FRP
10	PSAVE	26	VCO IN(NTSC)	42	FRP
11	SW2	27	VCO OUT(NTSC)	43	BLK IN
12	SW1	28	APC FIL	44	DAC OUT
13	BIN1	29	VCO IN(PAL)	45	NTSC/PAL OUT
14	GIN1	30	VCO OUT(PAL)	46	CLK
15	RIN1	31	GND1	47	DI
16	BIN2	32	GND2	48	CS



● Block Diagram Chart



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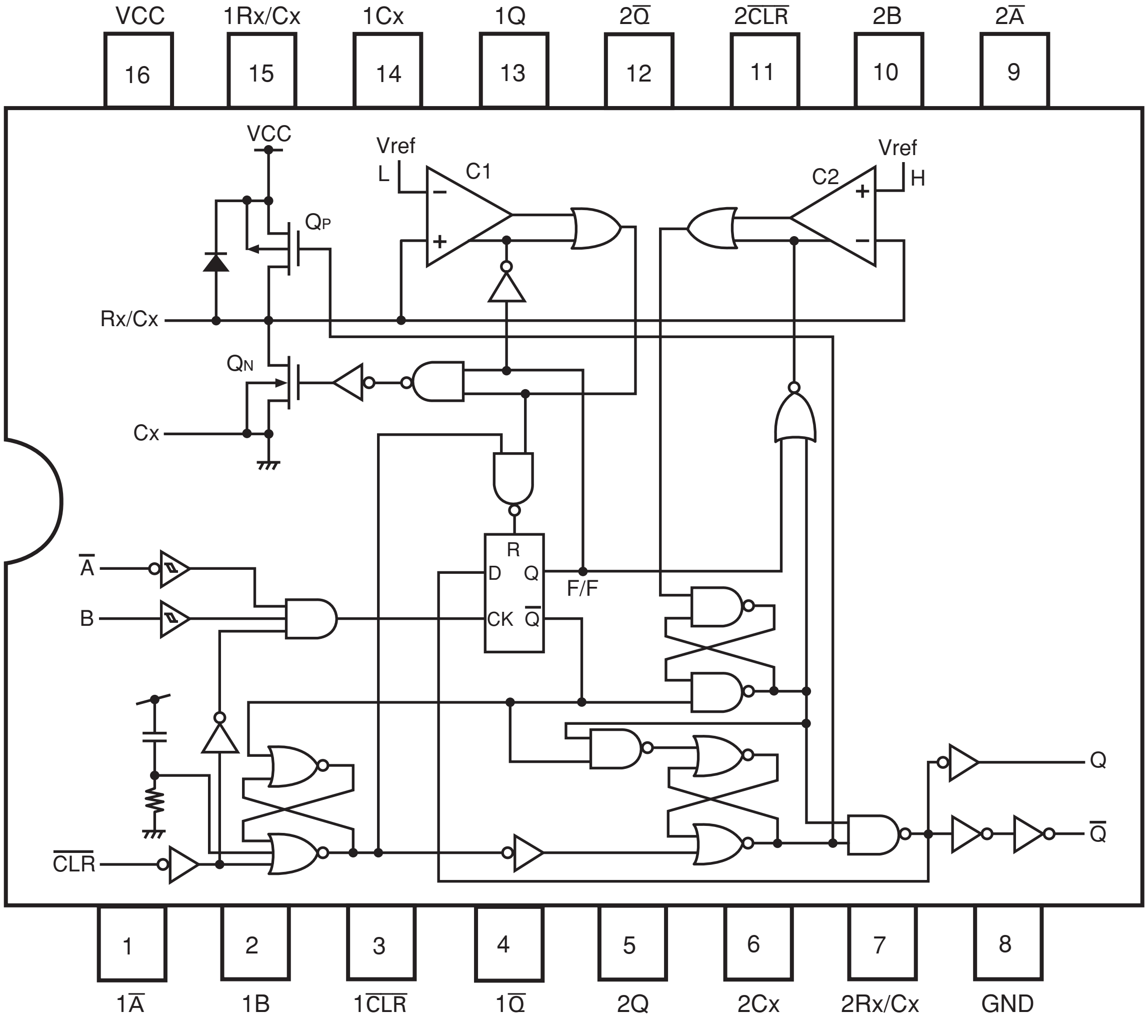

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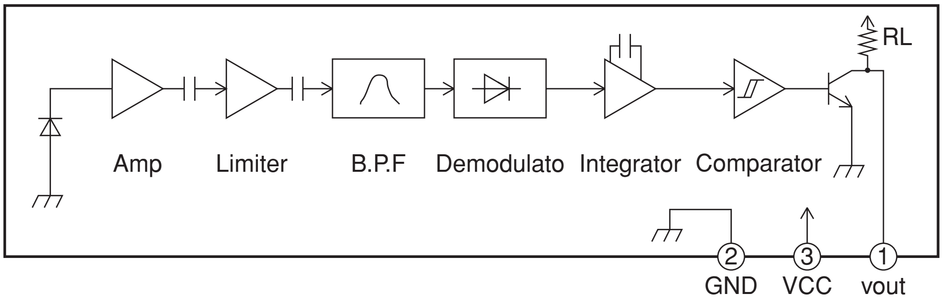
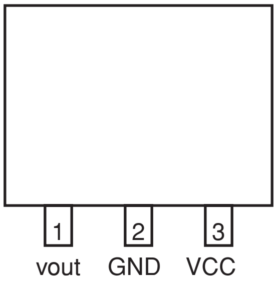


● Pin Arrangement Chart

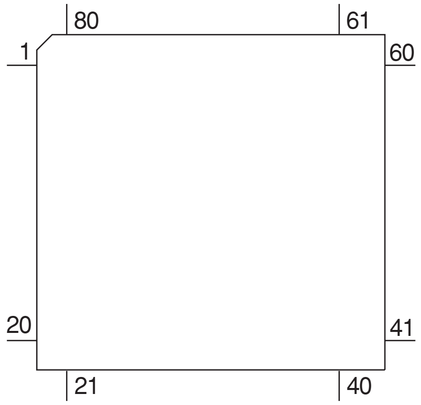


● Pin Functions (PE5584A)

Pin No.	Pin Name	I/O	Function and Operation
1	NC		Not used
2	PNLADX	I	Touch panel X directions A/D input
3	PNLADY	I	Touch panel Y directions A/D input
4	AVSS		A/D converter GND
5	DIMMER	O	Dimmer analog output
6	DOTCLK		Pixel align
7	AVREF1		D/A converter standard voltage
8	RXD	I	Data input from system microcomputer
9	TXD	O	Data output from system microcomputer
10	TSCK	I	Test mode clock input
11	MVIPW	O	Video power control output
12	LCDDT	I/O	LCD data input/output
13	LCDCK	O	LCD clock output
14	LCDCS	O	LCD chip select output
15	BLKDRV	O	Mute output
16	OSDTRE		Not used
17	OSDDT	O	OSD data output
18	OSDCK	O	OSD clock output
19	OSDCS	O	OSD chip select output
20	EPRRST	I	EEPROM data initialization mode input
21	EPRTEST	I	EEPROM data setting mode input
22	STEST	I	The monitor independent mode input for aging
23	TPTEST	I	Touch panel test mode input
24	PNLXV	O	Touch panel X directions power supply control output
25	PNLYV	O	Touch panel Y directions power supply control output
26	PNLVD	O	Touch panel power supply control output
27	RGBSEL	O	RGB/ C. Video select output
28	PSAVE	O	LCD IC power save output
29	COLSYS	O	NTSC/PAL detect output
30	INVBST	O	CCFL current boost output
31	OSDDIPS	O	OSD display control output
32	MFLPW	O	Back light power supply control output
33	VSS1		GND
34	MODS	O	Screen mode select output
35	MODW	O	Screen mode select output
36	MODN	O	Screen mode select output
37	NC		Not used
38	ROMDATA	I/O	ROM collection data input/output
39	ROMCLK	O	ROM collection clock output
40	ROMCS	O	ROM collection chip select output
41,42	NC		Not used
43	FREQSW	O	DC convertor select output
44	INVPUL	O	Inverter pulse output
45	NC		Not used
46	EPRDI	I	EEPROM serial data input
47	EPRDO	O	EEPROM serial data output
48	EPRCK	O	EEPROM serial clock output
49	EPRCS	O	EEPROM chip select output
50	NC		Not used
51	TESTIN	I	Chip test input
52	LEDDT	I/O	LED data input/output
53	LEDCK	O	LED clock output
54	LEDCS	O	LED chip select output
55	PHTEST	I	PHASE adjustment mode input
56	PALARI	I	Model type detect input
57	JUC	I	Model type detect input
58	ILMTEST	I	RGB illumination test mode input
59	SRVTEST	I	Adjustment mode input for service
60	RESET	I	Reset input
61	REMIN	I	Remote control data input

Pin No.	Pin Name	I/O	Function and Operation
62	VDDSENS	I	EEPROM power supply sense input
63	NC		Not used
64	VSYNC	I	Vertical synchronizing signal input
65,66	NC		Not used
67	VSS0		GND
68	VDD1		Power supply
69	X2		Crystal oscillating element connection
70	X1		Crystal oscillating element connection
71	VPP	I	Flash writing input
72	XT2		Not used
73	XT1		GND
74	VDD0		Power supply
75	AVDD		A/D converter power supply
76	KDT0	I	Analog key data intput
77	KDT1	I	Analog key data intput
78	KDT2	I	Analog key data intput
79	KDT3	I	Analog key data intput
80	TEMPSEN	I	Temperature detection input

PE5584A



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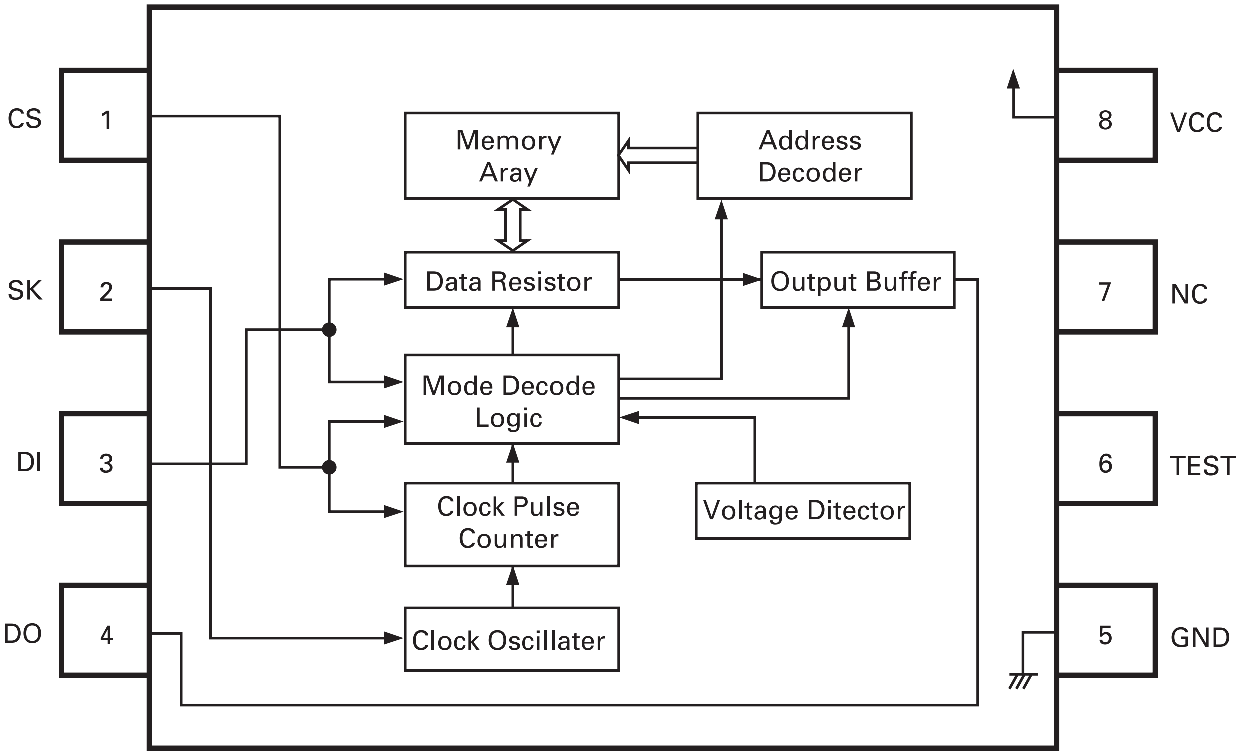
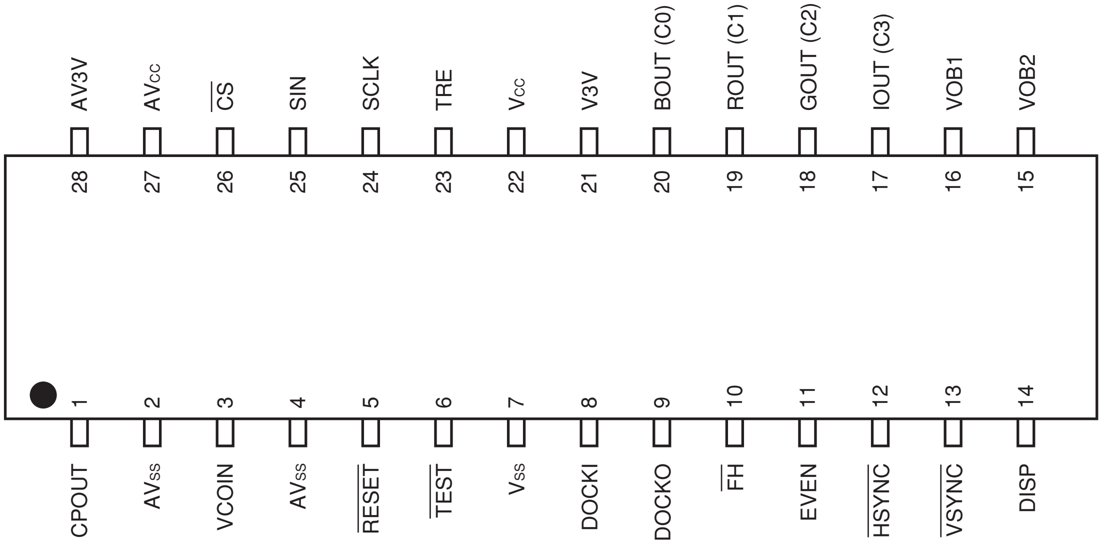
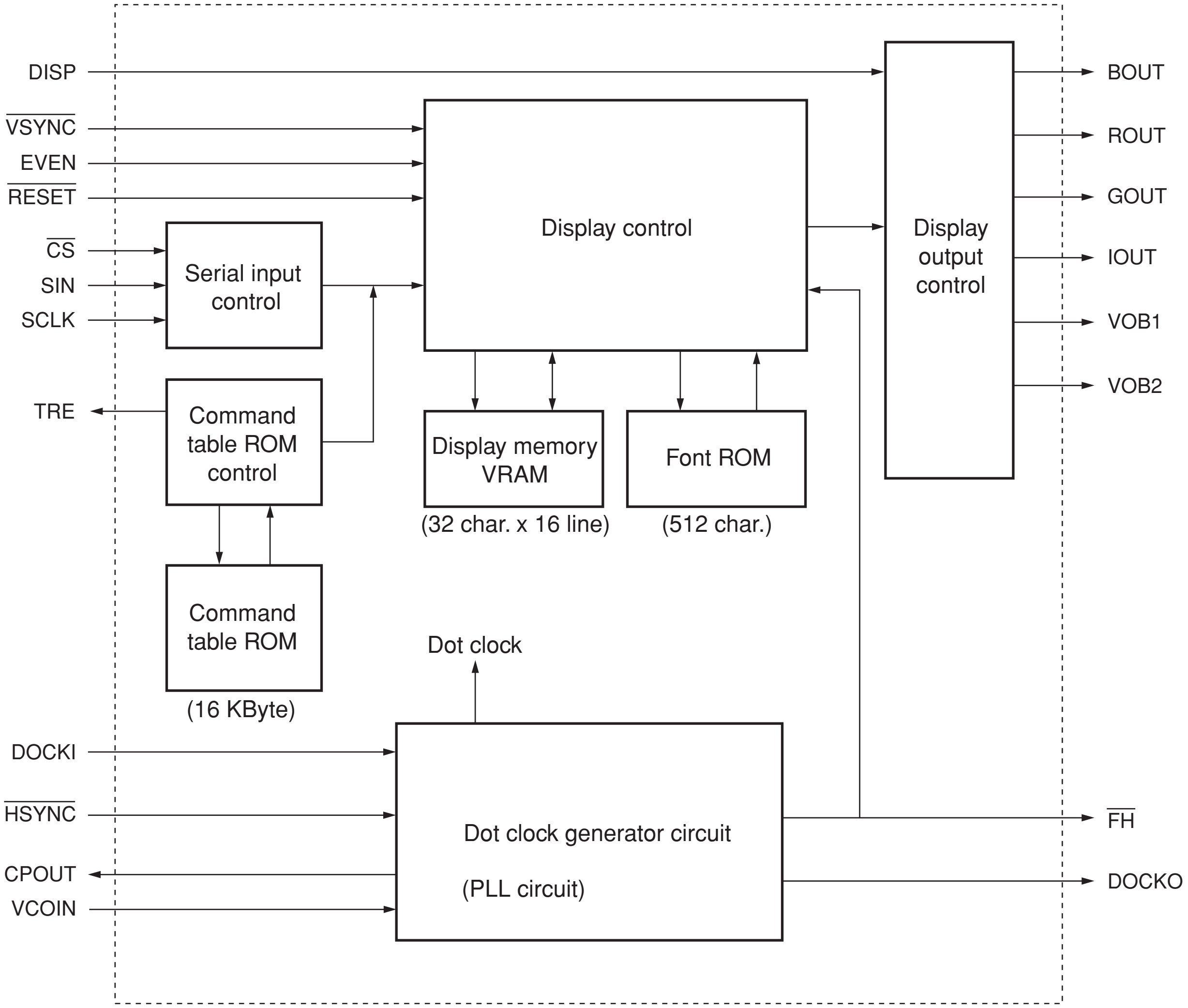


PD6567A

● Pin Arrangement Chart



● Block Diagram Chart

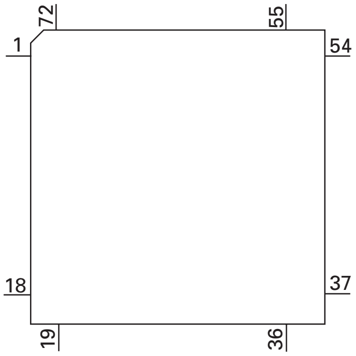


● Pin Functions (LZ9FE30)

Pin No.	Pin Name	I/O	Function and Operation
1	VIN	I	Vertical synchronizing signal input
2	CVOP	O	Vertical synchronous separation signal output
3	HON_E	O	Test setting output
4	HSY	I/O	Horizontal synchronizing signal input/output
5	VDD1		Power supply
6	FRPT	O	Polarity reversing signal output (common electrode)
7	SYNI	I	Compound synchronous signal input
8	FRPV	O	Polarity reversing signal output (video signal)
9	GND1		GND
10	VCS	O	Normal mode mask signal output
11	NTPC	I	NTSC/PAL setting input
12	VSY	I/O	Vertical synchronizing signal input/output
13	HRVC	I	Horizontal scanning direction setting input
14	VRVC	I	Vertical scanning direction setting input
15	CLKC	I	Clock synchronous signal I/O setting input
16	MDS	I	Display mode setting input
17	GND2		GND
18	EXCL	I/O	Clock input/output
19	GND3		GND
20	MDW	I	Display mode setting input
21	MDN	I	Display mode setting input
22	PWM	O	Backlight control signal output
23	MON_F	O	Test setting output
24	VSWC	I	VSWO output control input
25	VSWI	I	Video system switch input
26	VSWO	O	Video system switch output
27	VDD2		Power supply
28	SPOI	I/O	Start signal input/output for source driver
29	GND4		GND
30	PCP	O	Test setting output
31	CLOC	I	EXCL port output mode switch input
32	MOD2	O	Control signal output for gate driver
33	HR	O	Horizontal scanning setting output for source driver
34	IVR	O	Vertical scanning setting output for gate driver
35	PS	O	Control signal output for source driver
36	CTR	O	Control signal output for source driver
37	SPIO	I/O	Start signal input/output for source driver
38	PDP	O	Phase comparison output
39	PAIR	I	Pairing setting siganl input
40	MON	O	Test setting output
41	APN	I	Horizontal display position setting input
42	GND5		GND
43	OSCO	O	Clock oscillation circuit output
44	OSCI	I	Clock oscillation circuit input
45	VDD3		Power supply
46	GND6		GND
47	CLD	O	Clock signal output for source driver
48	TST1	I	Test setting input
49	RESH	I	Horizontal counter reset input
50	RESV	I	Vertical counter reset input
51	TST2	I	Test setting input
52	TEST	I	Test setting input
53	MON_A	O	Test setting output
54	TPC	O	Touch panel control signal output
55	MON_C	O	Test setting output
56	MON_D	O	Test setting output
57	CLS	O	Clock signal output for gate driver
58	SPS	O	Reset signal output for gate driver
59	VR	O	Scanning setting output for gate driver
60	MOD1	O	Control signal output for gate driver
61	TCLK	I	Test setting input
62	GND7		GND
63	GND8		GND

Pin No.	Pin Name	I/O	Function and Operation
64	GPS	O	Signal output for gate power supply
65	LOWI	I	Control signal input for gate driver
66	ABC	I	Output setting input
67	VDC		Power supply
68	GND9		GND
69	DVTC	O	Test setting output
70	BLKI	I	Screen position adjustment input
71	BLKO	O	Screen position adjustment output
72	SYNO	O	Compound synchronous signal output

LZ9FE30



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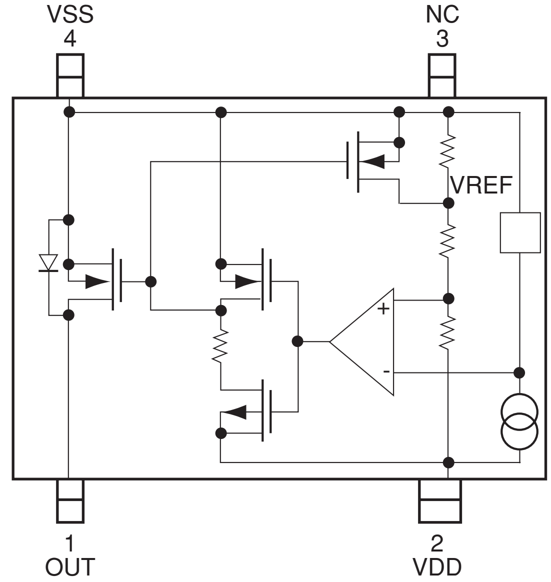
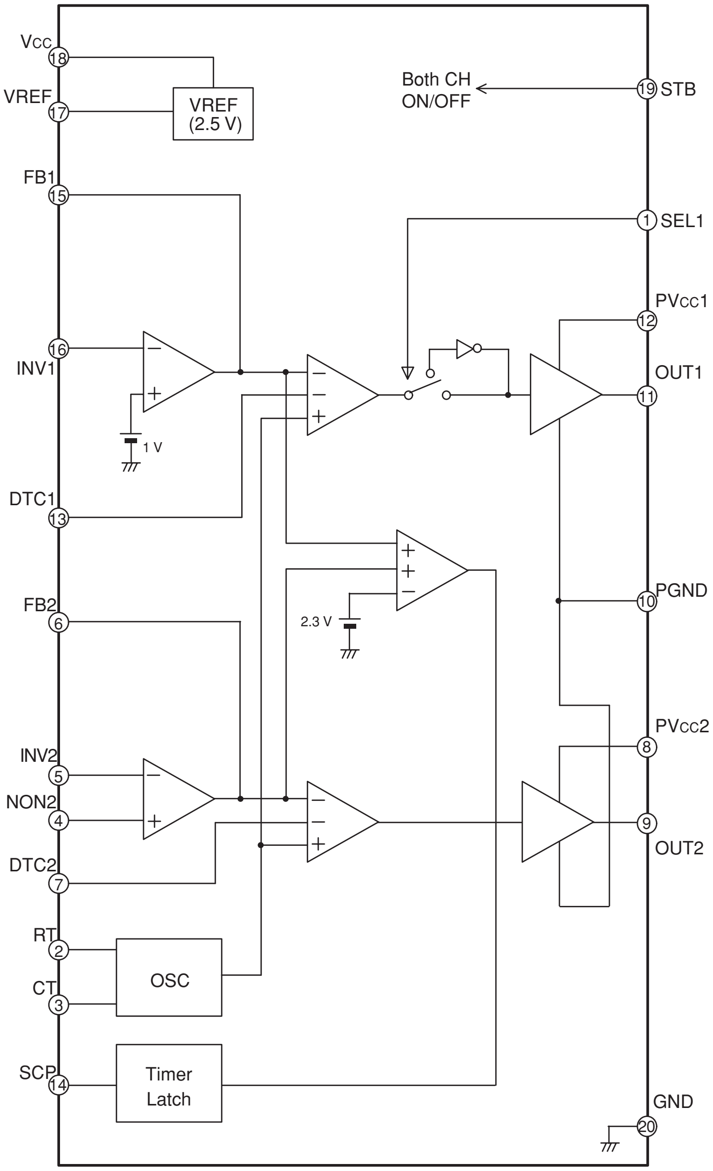


BD9851EFV

● Block Diagram



● Pin Layout

SEL1	1	20	GND
RT	2	19	STB
CT	3	18	VCC
NON2	4	17	VREF
INV2	5	16	INV1
FB2	6	15	FB1
DTC2	7	14	SCP
PVCC2	8	13	DTC1
OUT2	9	12	PVCC1
PGND	10	11	OUT1

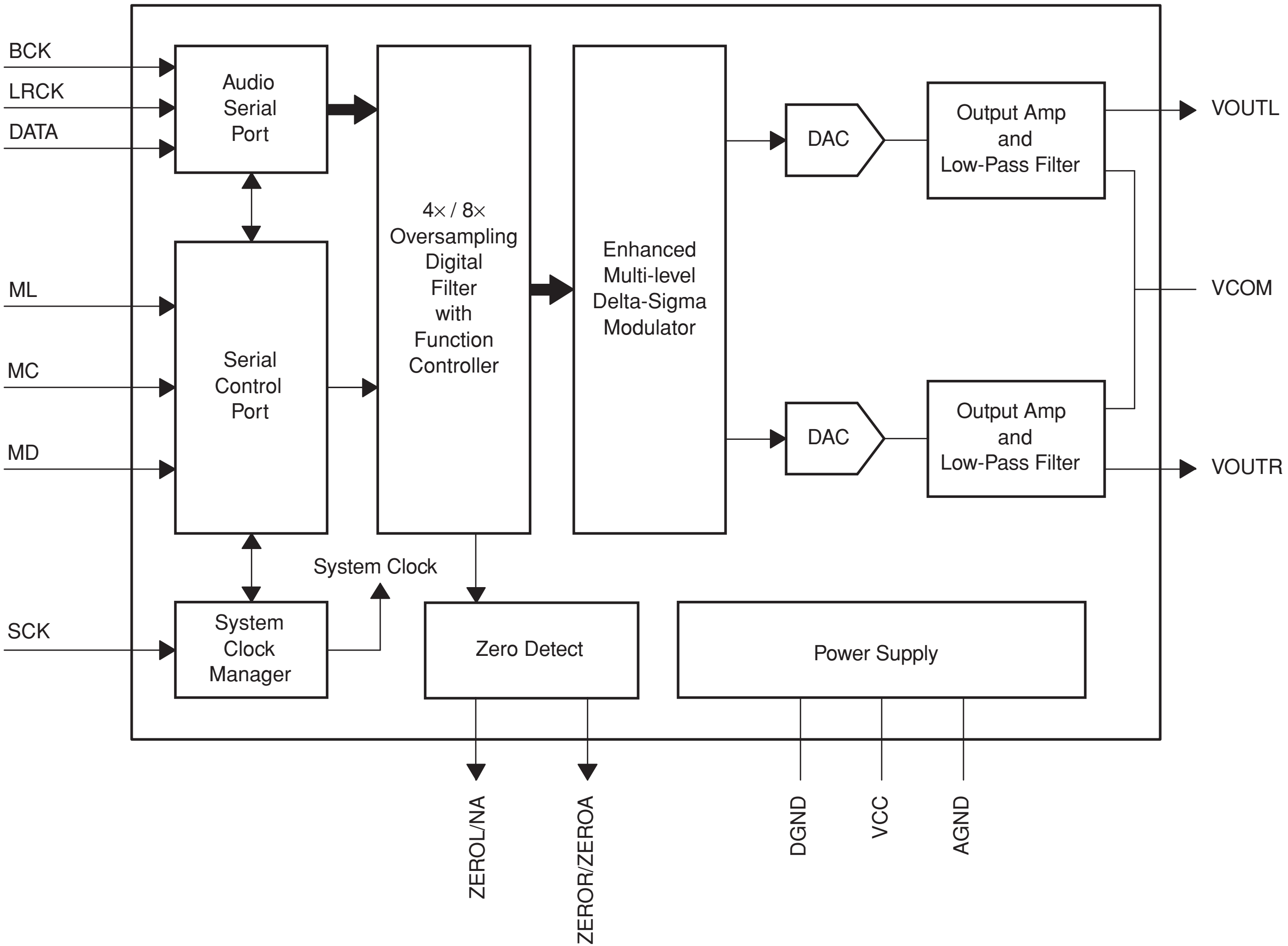
EDS1232AATA-75

VDD	1	86	VSS
DQ0	2	85	DQ15
VDDQ	3	84	VSSQ
DQ1	4	83	DQ14
DQ2	5	82	DQ13
VSSQ	6	81	VDDQ
DQ3	7	80	DQ12
DQ4	8	79	DQ11
VDDQ	9	78	VSSQ
DQ5	10	77	DQ10
DQ6	11	76	DQ9
VSSQ	12	75	VDDQ
DQ7	13	74	DQ8
NC	14	73	NC
VDD	15	72	VSS
DQM0	16	71	DQM1
/WE	17	70	NC
/CAS	18	69	NC
/RAS	19	68	CLK
/CS	20	67	CKE
A11	21	66	A9
BA0	22	65	A8
BA1	23	64	A7
A10(AP)	24	63	A6
A0	25	62	A5
A1	26	61	A4
A2	27	60	A3
DQM2	28	59	DQM3
VDD	29	58	VSS
NC	30	57	NC
DQ16	31	56	DQ31
VSSQ	32	55	VDDQ
DQ17	33	54	DQ30
DQ18	34	53	DQ29
VDDQ	35	52	VSSQ
DQ19	36	51	DQ28
DQ20	37	50	DQ27
VSSQ	38	49	VDDQ
DQ21	39	48	DQ26
DQ22	40	47	DQ25
VDDQ	41	46	VSSQ
DQ23	42	45	DQ24
VDD	43	44	VSS

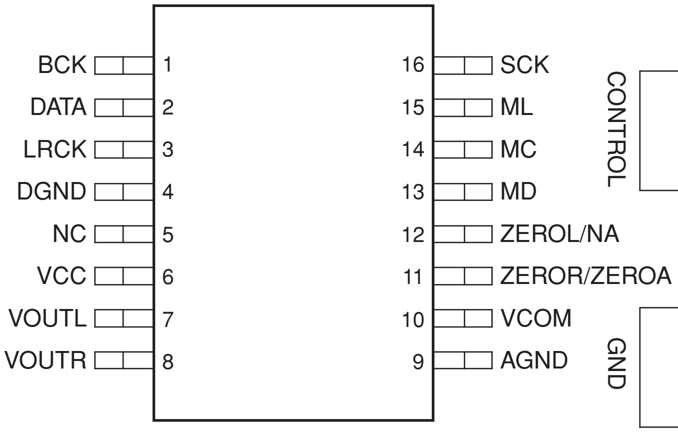
A0 to A11	Address Inputs	DQM0 to DQM3	DQ mask enable
BA0,BA1	Bank select	CKE	Clock enable
DQ0 to DQ31	Data Input/output	CLK	Clock Input
/CS	Chip select	VDD	Supply voltage
/RAS	Row address atrobe	VSS	Ground
/CAS	Column address strobe	VDDQ	Supply voltage for DQ
/WE	Write enable	VSSQ	Ground for DQ
		NC	No connection

PCM1753DBQ

● Block Diagram


BCK
LRCK
DATA
Audio Serial Port
ML
MC
MD
Serial Control Port
4× / 8× Oversampling Digital Filter with Function Controller
Enhanced Multi-level Delta-Sigma Modulator
DAC
DAC
Output Amp and Low-Pass Filter
Output Amp and Low-Pass Filter
VOUTL
VCOM
VOUTR
System Clock
SCK
System Clock Manager
Zero Detect
Power Supply
ZEROL/NA
ZEROR/ZEROA
DGND
VCC
AGND

● Pin Layout



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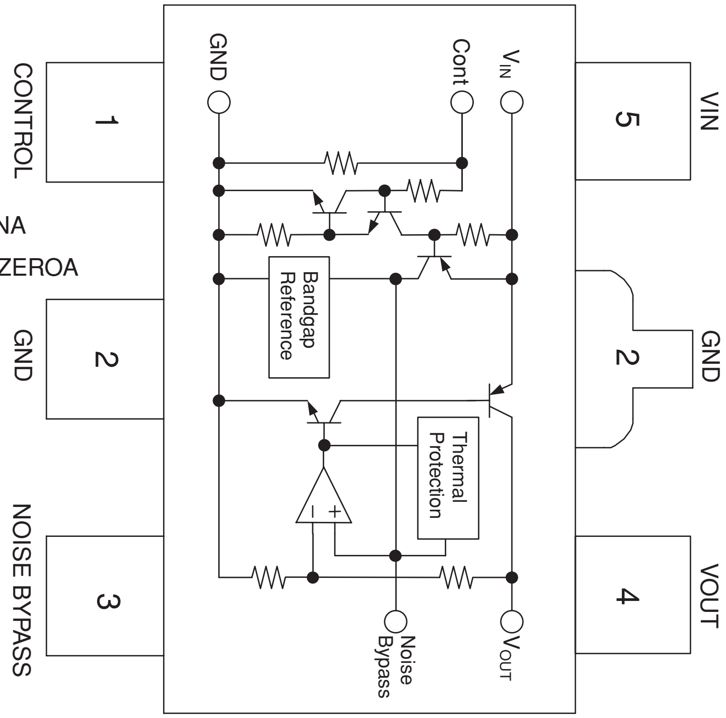

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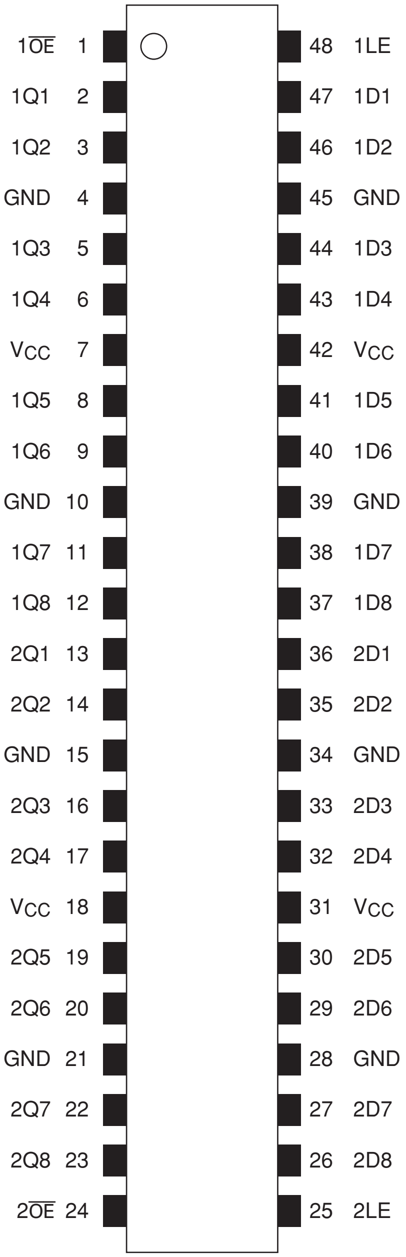
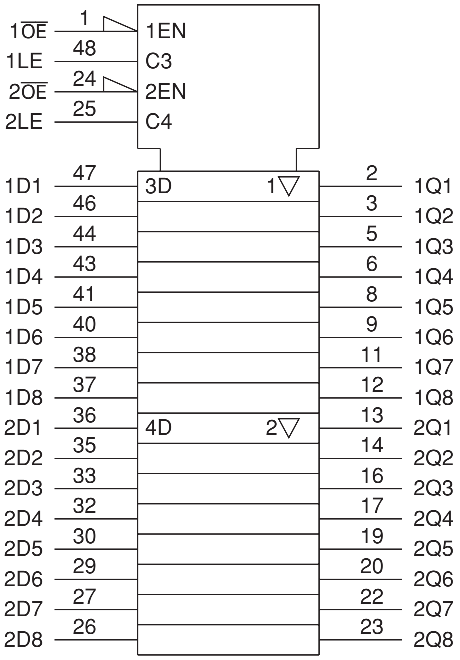
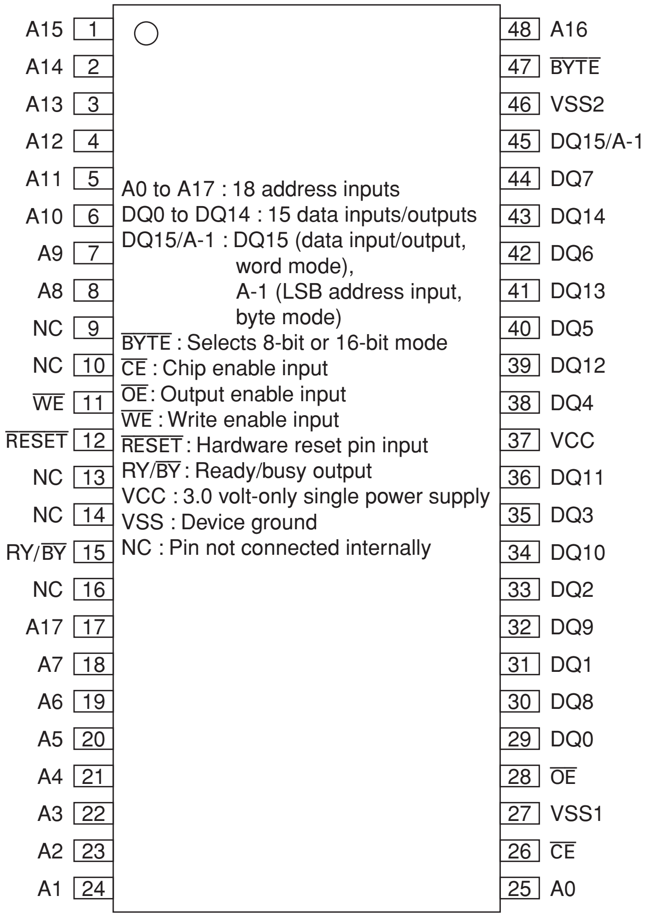


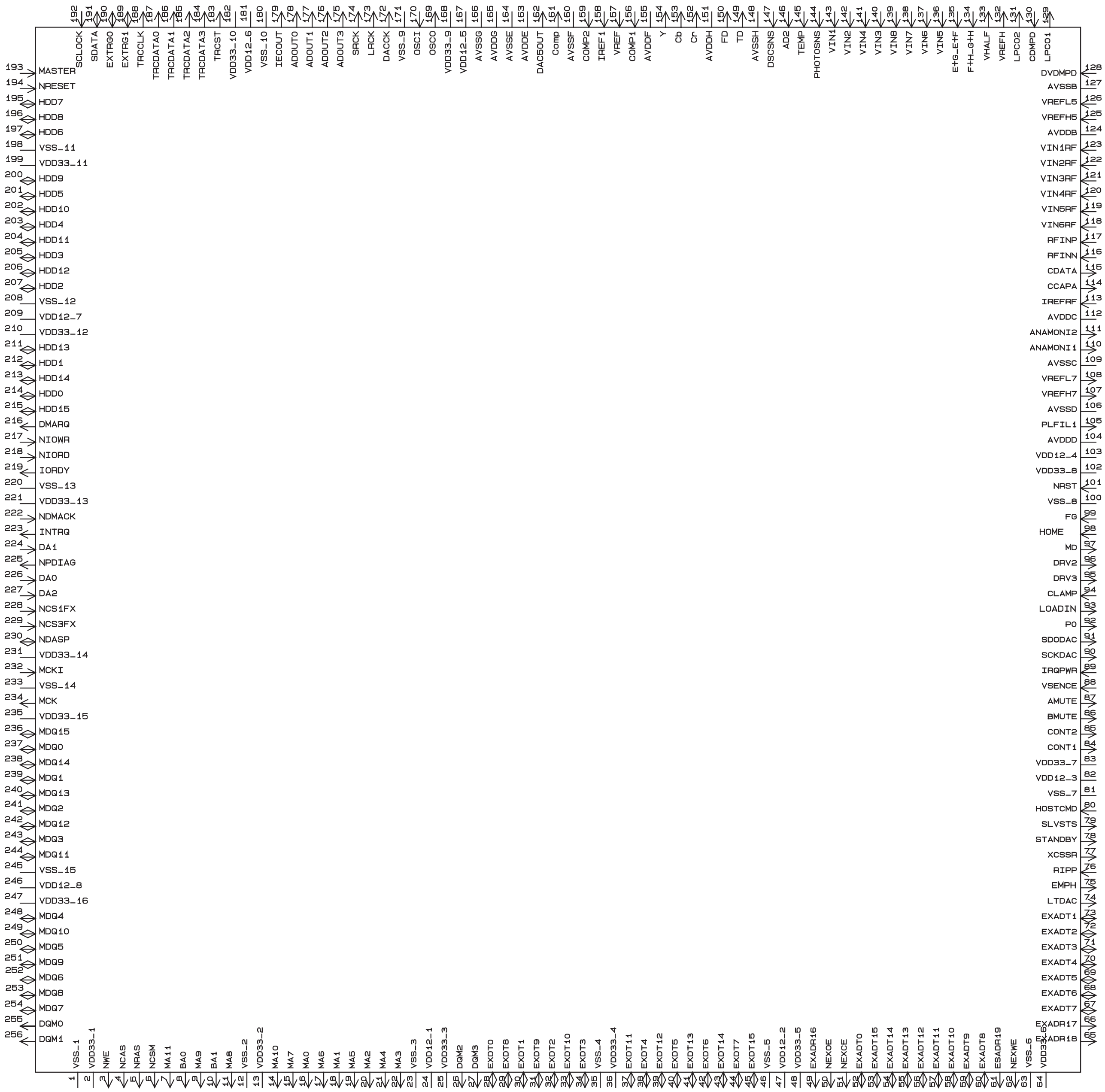


CWW1423
CWW1424



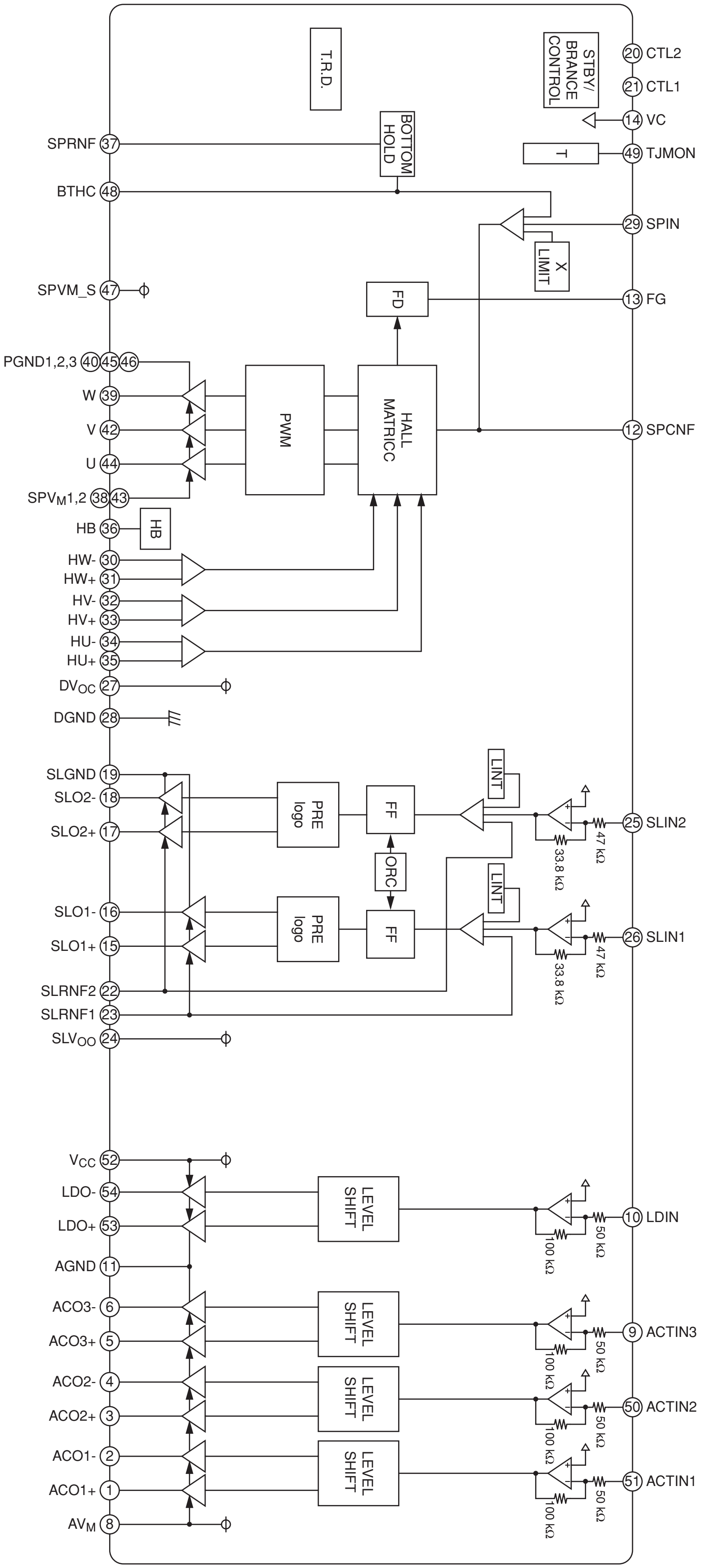
A0 to A17 : 18 address inputs
DQ0 to DQ14 : 15 data inputs/outputs
DQ15/A-1 : DQ15 (data input/output, word mode), A-1 (LSB address input, byte mode)
BYTE : Selects 8-bit or 16-bit mode
CE : Chip enable input
OE : Output enable input
WE : Write enable input
RESET : Hardware reset pin input
RY/BY : Ready/busy output
VCC : 3.0 volt-only single power supply
VSS : Device ground
NC : Pin not connected internally

MN2DS0016

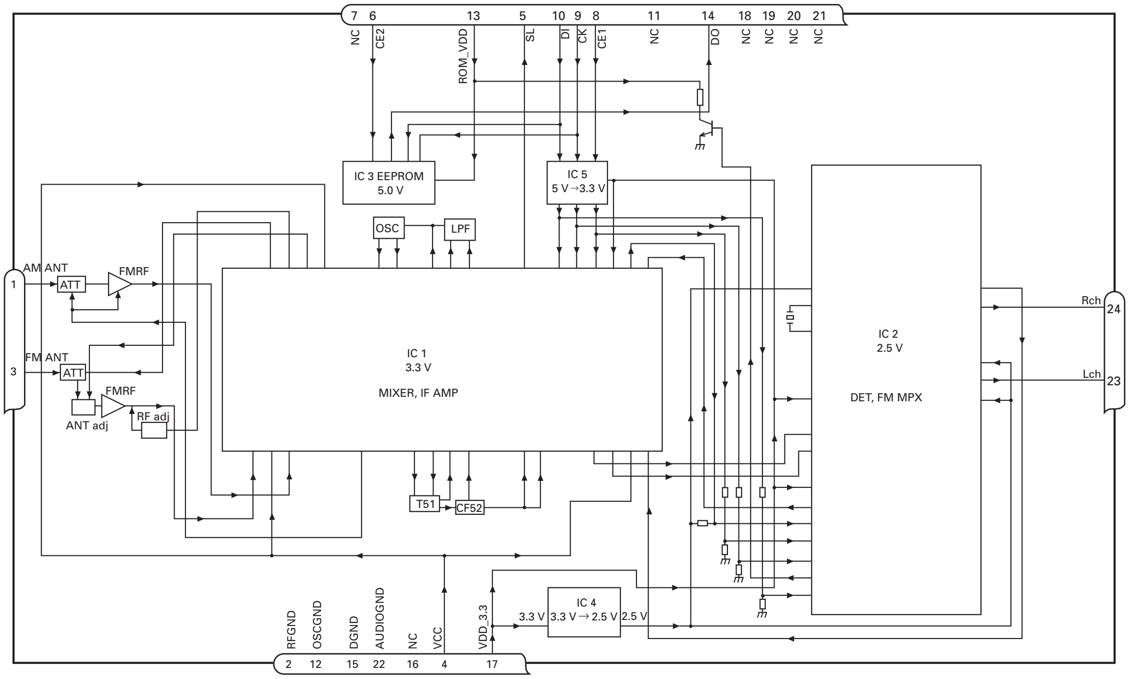


VSS	GND		AD	Servo AD input	I
VDD	Power supply		PWM	Tracking (Focus) drive output	O
NWE	SDRAM write enable	O	DACOUT	RGB analog signal	O
NCAS	SDRAM Column address strobe	O	COMP	DAC stabilization connect pin	I
NRAS	SDRAM low address strobe	O	VREF	DAC reference input	I
NCSM	SDRAM chip select	O	IREF	DAC bias current setting pin	I
MA	SDRAM address	I/O	OSCO	Resonator output	O
BA	SDRAM bank address	O	OSCI	Resonator input	I
DQM	SDRAM data mask	I/O	DACCK	Audio clock	I/O
EXDT	External memory data	I/O	LRCK	LR chann clock output	O
EXADR	External memory address	I/O	SRCK	Bit clock output	O
NEXOE	External memory output chip enable	O	ADOUT	Audio down mix output	I/O
NEXCE	External memory chip select	O	IECOUT	Digital audio output	I/O
EXADT	External memory address	I/O	TRCST	Output trace status for debugging	I/O
NEXWE	External memory write enable	O	TRCDATA	Output trace data for debugging	I/O
P	General port	I/O	TRCCLK	Output trace clock for debugging	I/O
DRV	Servo port	I/O	EXTRG	I/O trigger for debugging	I/O
FG	Motor FG	I/O	SDATA	Data for debugging	I/O
NRST	Master reset	I	SCLOCK	Input clock for debugging	I
AVDD	Analog power supply		MASTER	ATAPI master slave signal input	I/O
PLFIL	Connect for DRC-VCO	O	NRESET	ATAPI reset input signal	I
AVSS	Analog GND		HDD	ATAPI I/O data	I/O
VREFH	ADC reference voltage for DRC(TOP)	O	DMARQ	ATAPI host DMA request output	I/O
VREFL	ADC reference voltage for DRC(BTM)	O	NIOWR	ATAPI host write signal	I/O
ANAMONI	Analog monitor	O	NIORD	ATAPI host read signal	I/O
IREFRF	Reference voltage	I	IORDY	ATAPI host ready output	I/O
CCAPA	Inline capa connect	O	NDAMCK	ATAPI host DMA acnorigge input	I
CDATA	Inline data connect	O	INTRQ	ATAPI host interrupt output	I/O
RFINN	External RF input	I	DA	ATAPI host address	I/O
RFINP	External RF input	I	NPDIAG	ATAPI diagnosis signal	I/O
VINRF	RF input	I	NCSFX	ATAPI host chip select input	I
LPC	DVD/CD LPC input	I	MCKI	SDRAM input clock	I
LPCO	DVD/CD LPC output	O	MCK	SDRAM clock	O
VHALF	Reference voltage	O	MDQ	SDRAM data	I/O

BD7996EFV

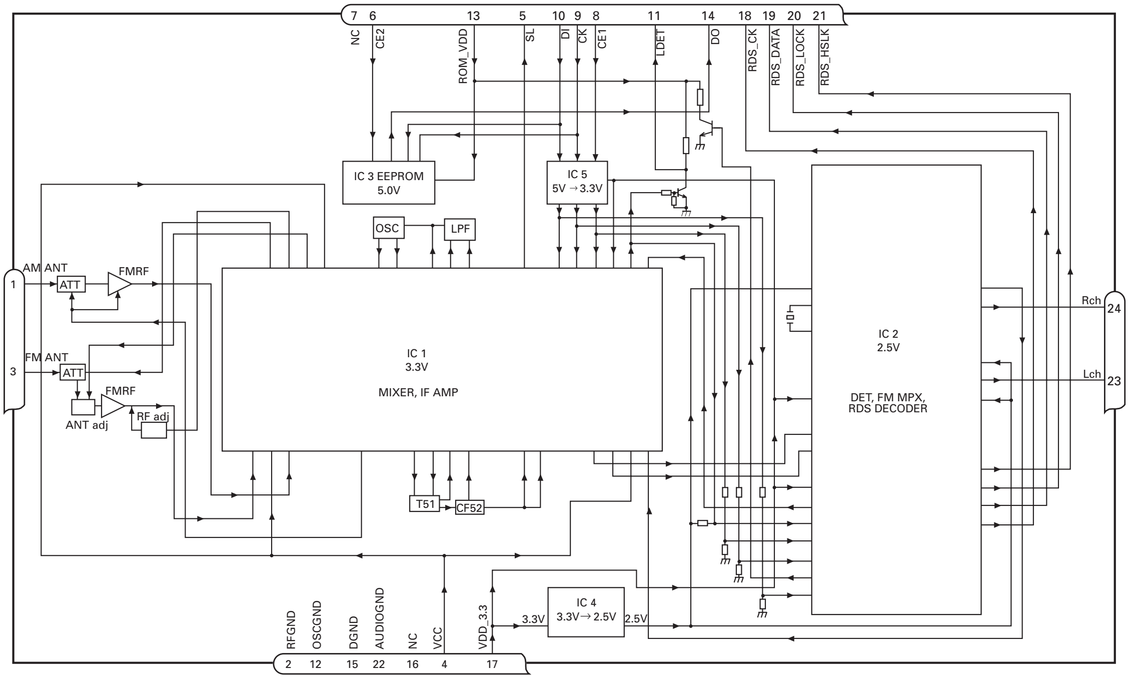

T.R.D.
STBY/ BRANCE CONTROL
20 CTL2
21 CTL1
14 VC
SPRNF 37
BOTTOM HOLD
T
49 TJMON
BTHC 48
29 SPIN
X LIMIT
SPVM_S 47
FD
13 FG
PGND1,2,3 40 45 46
W 39
V 42
U 44
PWM
HALL MATRICC
12 SPCNF
SPVM1,2 38 43
HB 36
HB
HW- 30
HW+ 31
HV- 32
HV+ 33
HU- 34
HU+ 35
DVOC 27
DGND 28
SLGND 19
SLO2- 18
SLO2+ 17
PRE logo
FF
LINT
47 kΩ
33.8 kΩ
25 SLIN2
ORC
SLO1- 16
SLO1+ 15
PRE logo
FF
LINT
47 kΩ
33.8 kΩ
26 SLIN1
SLRNF2 22
SLRNF1 23
SLVOO 24
VCC 52
LDO- 54
LDO+ 53
LEVEL SHIFT
50 kΩ
100 kΩ
10 LDIN
AGND 11
ACO3- 6
ACO3+ 5
LEVEL SHIFT
50 kΩ
100 kΩ
9 ACTIN3
ACO2- 4
ACO2+ 3
LEVEL SHIFT
50 kΩ
100 kΩ
50 ACTIN2
ACO1- 2
ACO1+ 1
LEVEL SHIFT
50 kΩ
100 kΩ
51 ACTIN1
AVM 8

● FM/AM Tuner Unit (UC)



No.	Symbol	I/O	Explain	
1	AMANT	I	AM antenna input	AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7 µH. (LAU type inductor)A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission line.
2	RFGND		RF ground	Ground of antenna block
3	FMANT	I	FM antenna input	Input of FM antenna 75 Ω Surge absorber(DSP-201M-S00B)is necessary.
4	VCC		power supply	The power supply for analog block. D.C 8.4 V± 0.3 V
5	SL	O	signal level	Output of FM/AM signals level
6	CE2	I	chip enable-2	Chip enable for EEPROM ″Low″ active
7	NC		non connection	Not used
8	CE1	I	chip enable-1	Chip enable for AF•RF ″High″ active
9	CK	I	clock	Clock
10	DI	I	data in	Data input
11	NC		non connection	Not used
12	OSCGND		osc ground	Ground of oscillator block
13	ROM_VDD		power supply	Power supply for EEPROM pin 13 is connected with a power supply of micro computer.
14	DO	O	data out	Data output
15	DGND		digital ground	Ground of digital block
16	NC		non connection	Not used
17	VDD_3.3		power supply	The power supply for digital block. 3.3 V ± 0.2 V
18	NC		non connection	Not used
19	NC		non connection	Not used
20	NC		non connection	Not used
21	NC		non connection	Not used
22	AUDIOGND		audio ground	Ground of audio block
23	L ch	O	L channel output	FM stereo “L-ch” signal output or AM audio output
24	R ch	O	R channel output	FM stereo “R-ch” signal output or AM audio output

FM/AM Tuner Unit (EW5)



No.	Symbol	I/O	Explain	
1	AMANT	I	AM antenna input	AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7 µH. (LAU type inductor) A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission line.
2	RFGND		RF ground	Ground of antenna block
3	FMANT	I	FM antenna input	Input of FM antenna 75 Ω Surge absorber(DSP-201M-S00B)is necessary.
4	VCC		power supply	The power supply for analog block. D.C 8.4 V ± 0.3 V
5	SL	O	signal level	Output of FM/AM signals level
6	CE2	I	chip enable-2	Chip enable for EEPROM ″Low″ active
7	NC		non connection	Not used
8	CE1	I	chip enable-1	Chip enable for AF•RF ″High″ active
9	CK	I	clock	Clock
10	DI	I	data in	Data input
11	LDET	O	lock detector	“Low” active
12	OSCGND		osc ground	Ground of oscillator block
13	ROM_VDD		power supply	Power supply for EEPROM pin 13 is connected with a power supply of micro computer.
14	DO	O	data out	Data output
15	DGND		digital ground	Ground of digital block
16	NC		non connection	Not used
17	VDD_3.3		power supply	The power supply for digital block. 3.3 V± 0.2 V
18	RDS_CK	O	RDS clock	Output of RDS clock(2.5 V)
19	RDS_DATA	O	RDS data	Output of RDS data(2.5 V)
20	RDS_LOCK	O	RDS lock	Output unit “High” active(2.5 V) (RDS_LOCK turns over by the external transistor. “Low” active)
21	RDS_HSLK	O	RDS high speed lock	Output unit “High” active(2.5 V)(RDS_HSLK turns over by the external transistor. “Low” active)
22	AUDIOGND		audio ground	Ground of audio block
23	L ch	O	L channel output	FM stereo “L-ch” signal output or AM audio output
24	R ch	O	R channel output	FM stereo “R-ch” signal output or AM audio output

7.3 EXPLANATION

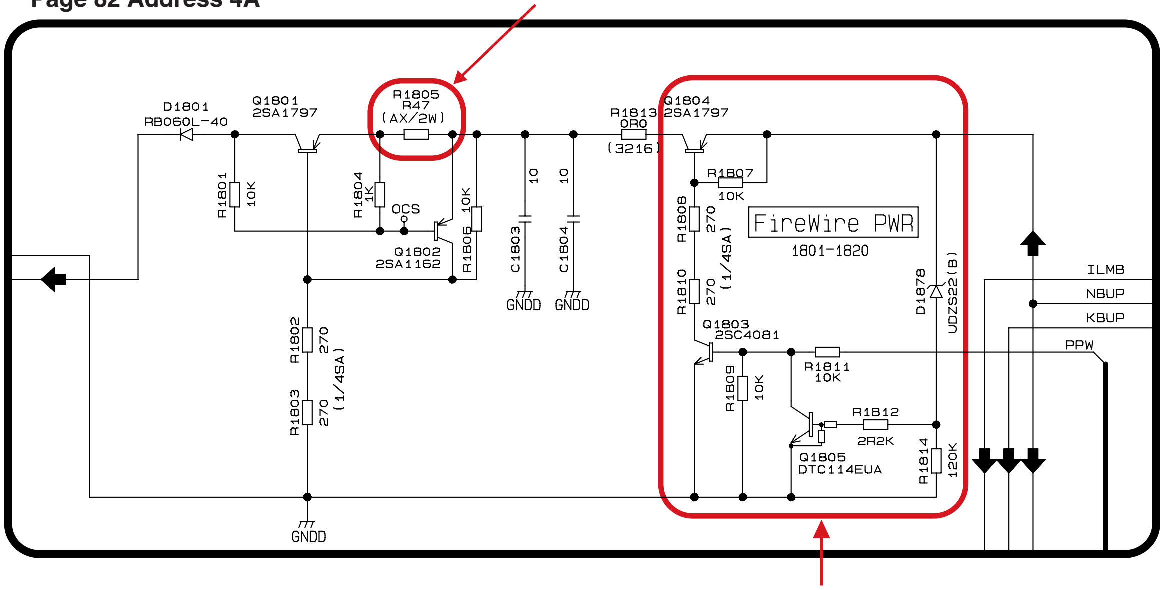
7.3.1 CIRCUIT DESCRIPTIONS

● FireWire PWR

FireWire : Power supply circuit to supply electricity to iPod.

Page 82 Address 4A

Overcurrent detection resistor 0.47 Ω



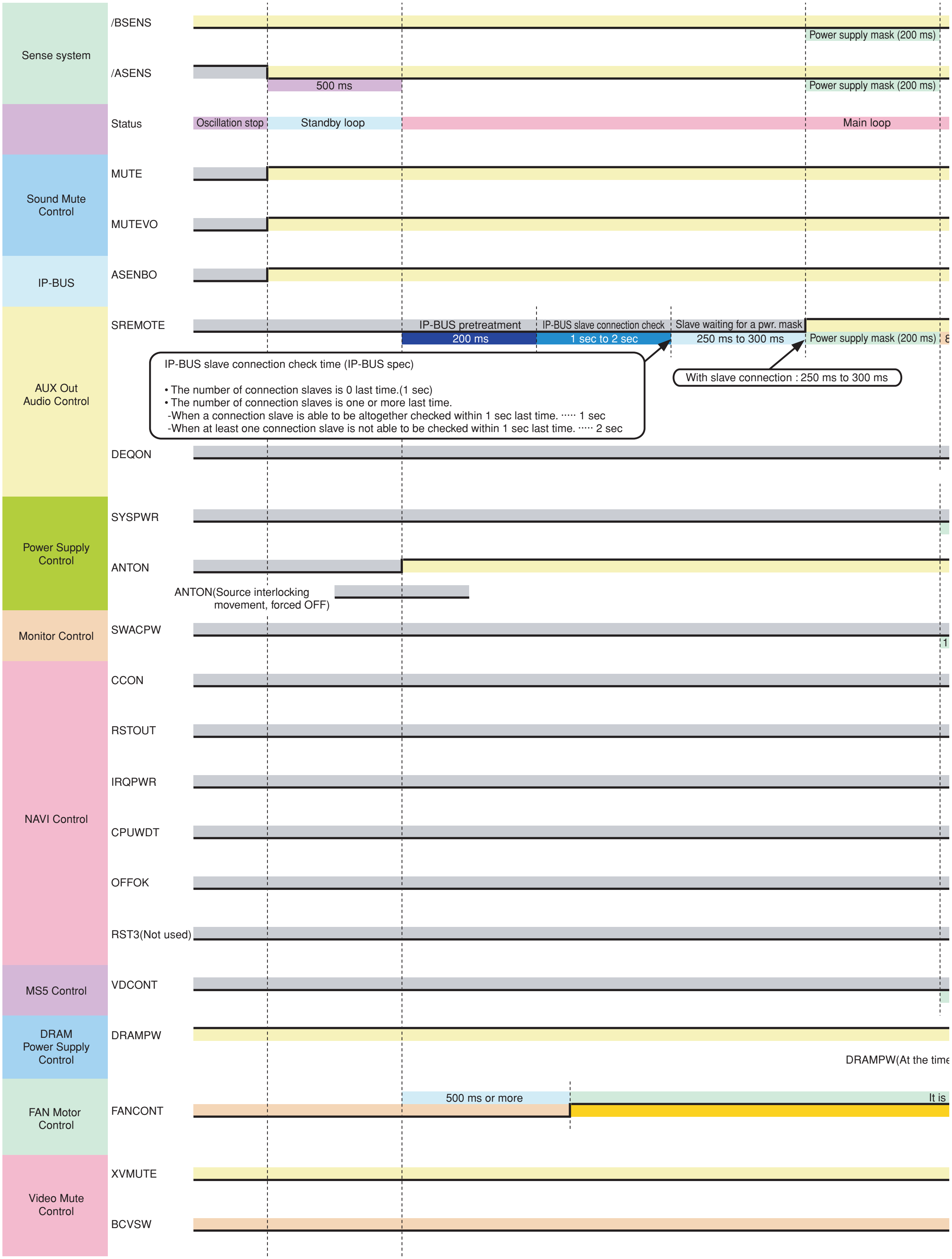
A popular switch circuit.
When there is an overvoltage, D1878 will be ON and PPW will be dropped down to Low level by force so that the overvoltage will not be applied to the iPod side.

Overcurrent detection mechanism

1. The current exceeding the allowable range flows to the load side (=iPod).
2. The difference of electrical potential at both ends of R1805 becomes large exceeding approximately 0.6 V.
3. As a result of the difference of potential between the emitter and the base of Q1802, the current starts to flow from the emitter to the base, and the difference of potential between the emitter and the collector becomes almost zero.
4. The difference of potential between the emitter and the base of Q1801 no longer exists, and Q1801 will close.
5. It is designed in a way that, if the output is grounded, the current will start flowing to Q1802 even before that and that Q1801 will close.

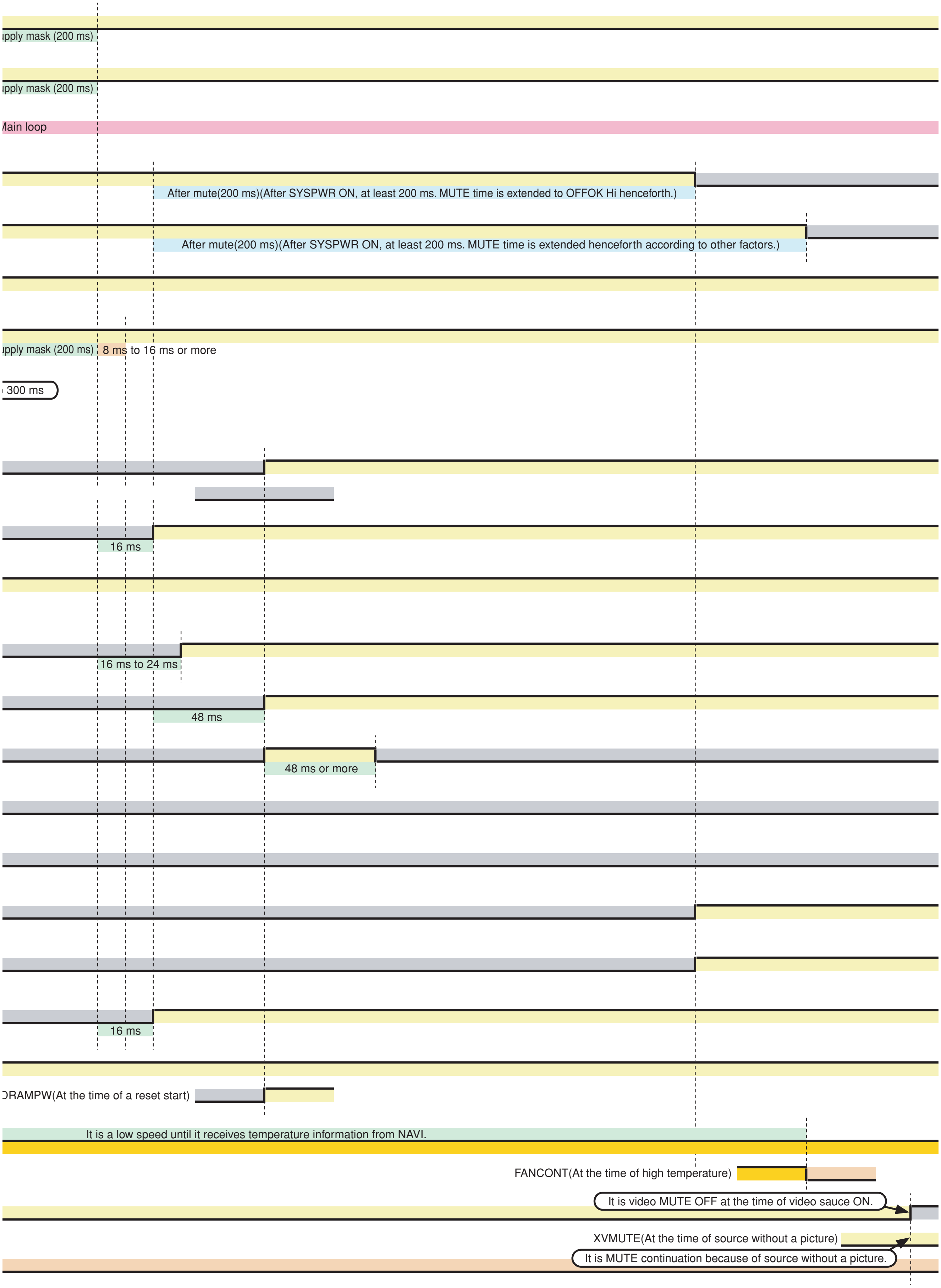
7.3.2 OPERATIONAL FLOW CHART

● Acc ON(Normal Acc ON)(Reference)



IP-BUS slave connection check time (IP-BUS spec)

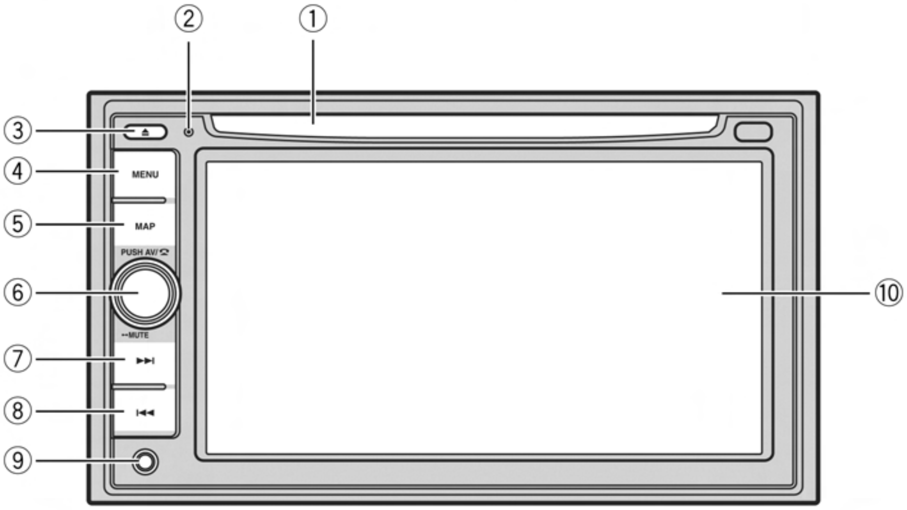
- The number of connection slaves is 0 last time.(1 sec)
- The number of connection slaves is one or more last time.
  - -When a connection slave is able to be altogether checked within 1 sec last time. ····· 1 sec
  - -When at least one connection slave is not able to be checked within 1 sec last time. ····· 2 sec


pply mask (200 ms)
pply mask (200 ms)
ain loop
After mute(200 ms)(After SYSPWR ON, at least 200 ms. MUTE time is extended to OFFOK Hi henceforth.)
After mute(200 ms)(After SYSPWR ON, at least 200 ms. MUTE time is extended henceforth according to other factors.)
pply mask (200 ms)
8 ms to 16 ms or more
300 ms
16 ms
16 ms to 24 ms
48 ms
48 ms or more
16 ms
RAMPW(At the time of a reset start)
It is a low speed until it receives temperature information from NAVI.
FANCONT(At the time of high temperature)
It is video MUTE OFF at the time of video sauce ON.
XVMUTE(At the time of source without a picture)
It is MUTE continuation because of source without a picture.

8. OPERATIONS

Navigation unit

This section gives information about the names of the parts and the main features using the buttons.



① **Disc loading slot**

➲ “Inserting/Ejecting a Disc”

② **RESET button**

➲ “Resetting the Microprocessor”

③ **EJECT button**

④ **MENU button**
Press to display the navigation menu or audio menu.

⑤ **MAP button**
Press to view the map or change view mode.

⑥ **VOLUME knob**
Turn to adjust the AV volume or press to change AV source.

⑦ **Fast forward button**

⑧ **Backward button**

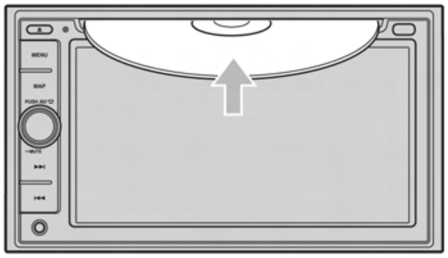
⑨ **Mini jack**
This is the AV-2 input terminal. Use the CD-RM10 (sold separately) to connect the external video component.

⑩ **LCD display**

Inserting/Ejecting a Disc

Inserting a disc

1 Insert a disc into the disc loading slot.



- ❒ The DVD drive plays one standard 12-cm or 8-cm (single) disc at a time. Do not use an adapter when playing 8-cm discs.
- ❒ Do not insert anything other than a disc into the disc loading slot.
- ➲ "Playable Discs"
- ❒ If you cannot insert a disc completely or if a inserted disc is not recognized, check that the label side of the disc is up. Also, press the **EJECT** button to eject the disc, and check the disc for damage before inserting the disc again.
- ❒ If the built-in DVD drive does not operate properly, an error message such as Error-02 may be displayed.
- ➲ "Error Messages"

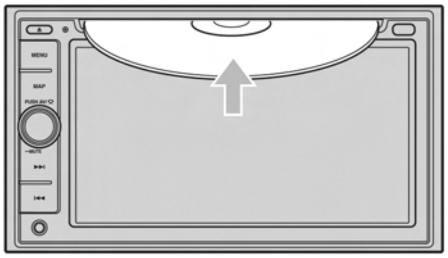
Ejecting a disc

1 Press the EJECT button.
The disc is ejected.

Flow from Startup to Termination

1 Start the engine.
After some time, the navigation opening screen comes on for a few seconds. Then, a message screen is displayed.

2 Insert the Pioneer DVD Map Disc to the disc loading slot.

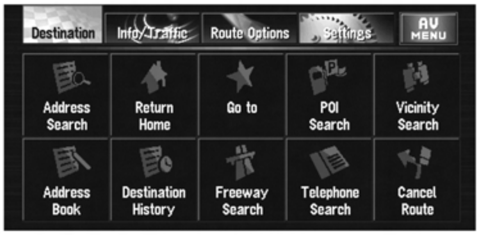


3 Check the details of the caution message and touch "OK".
You can operate the navigation system by touching keys displayed on the screen.
If the route is already set, it changes to route guidance mode. The map of your surroundings is displayed.

- ➲ How to read the current position screen
- ➲ Setting the time

4 Press the MENU button in the map screen.
Displays the NAVI MENU.

5 Allows you to assign a destination and begin route guidance.

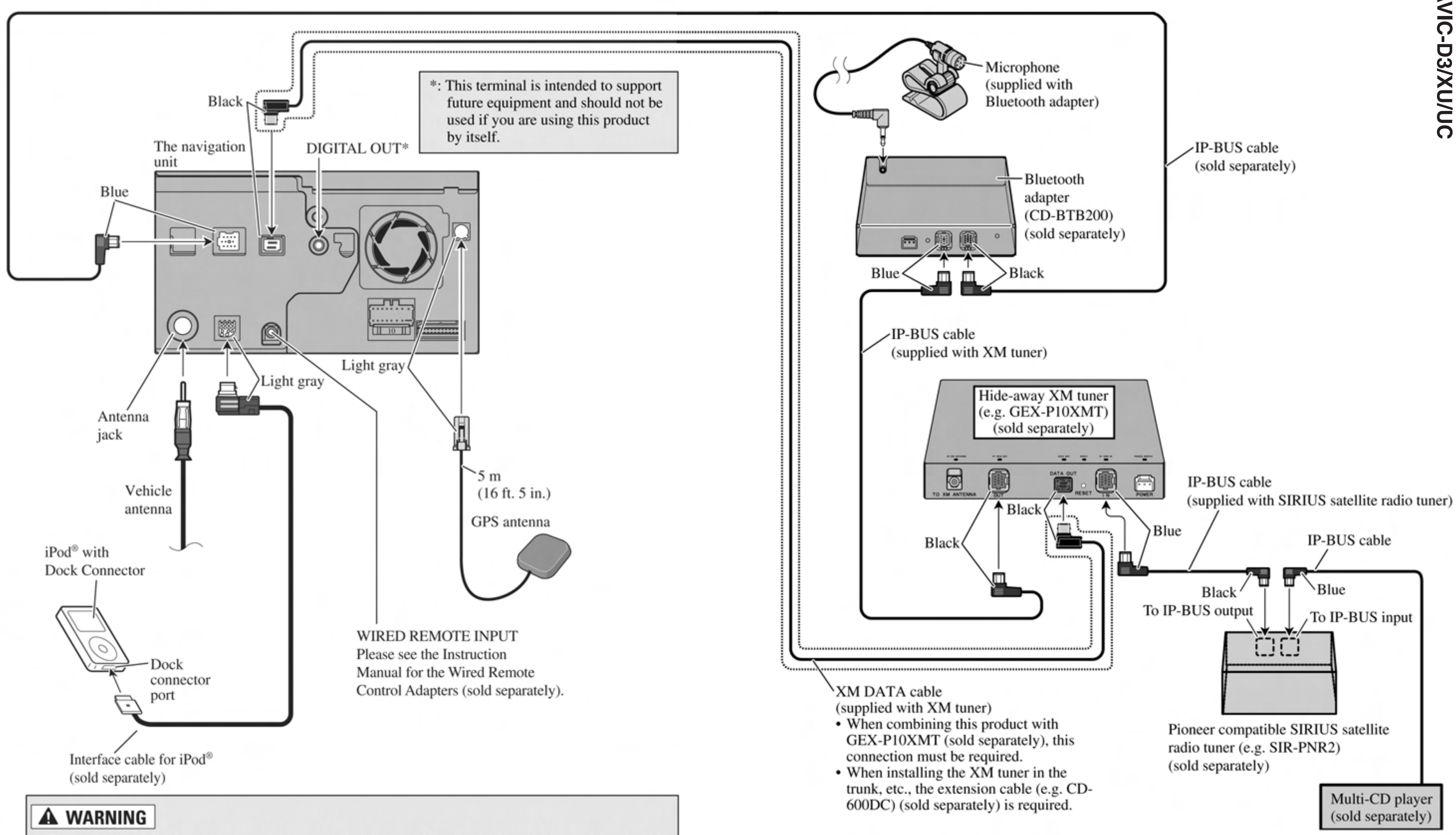


- ➲ Specifying the address and searching the destination
- ➲ Other search methods

6 Turn off the vehicle engine.
This navigation system is also turned off.

- ❒ Until the vicinity of the destination is reached, the set route will not be deleted even if the engine is turned off.

Connecting the system


Black
The navigation unit
DIGITAL OUT*
*: This terminal is intended to support future equipment and should not be used if you are using this product by itself.
Blue
Light gray
Light gray
Antenna jack
Vehicle antenna
5 m
(16 ft. 5 in.)
GPS antenna
iPod® with Dock Connector
Dock connector port
Interface cable for iPod®
(sold separately)
WIRED REMOTE INPUT
Please see the Instruction Manual for the Wired Remote Control Adapters (sold separately).
Microphone
(supplied with Bluetooth adapter)
IP-BUS cable
(sold separately)
Bluetooth adapter
(CD-BTB200)
(sold separately)
Blue
Black
IP-BUS cable
(supplied with XM tuner)
Hide-away XM tuner
(e.g. GEX-P10XMT)
(sold separately)
TO XM ANTENNA
OUT
DATA OUT
RESET
IN
POWER
Black
Black
Blue
IP-BUS cable
(supplied with SIRIUS satellite radio tuner)
IP-BUS cable
Black
Blue
To IP-BUS output
To IP-BUS input
XM DATA cable
(supplied with XM tuner)
• When combining this product with GEX-P10XMT (sold separately), this connection must be required.
• When installing the XM tuner in the trunk, etc., the extension cable (e.g. CD-600DC) (sold separately) is required.
Pioneer compatible SIRIUS satellite radio tuner (e.g. SIR-PNR2)
(sold separately)
Multi-CD player
(sold separately)

⚠ WARNING

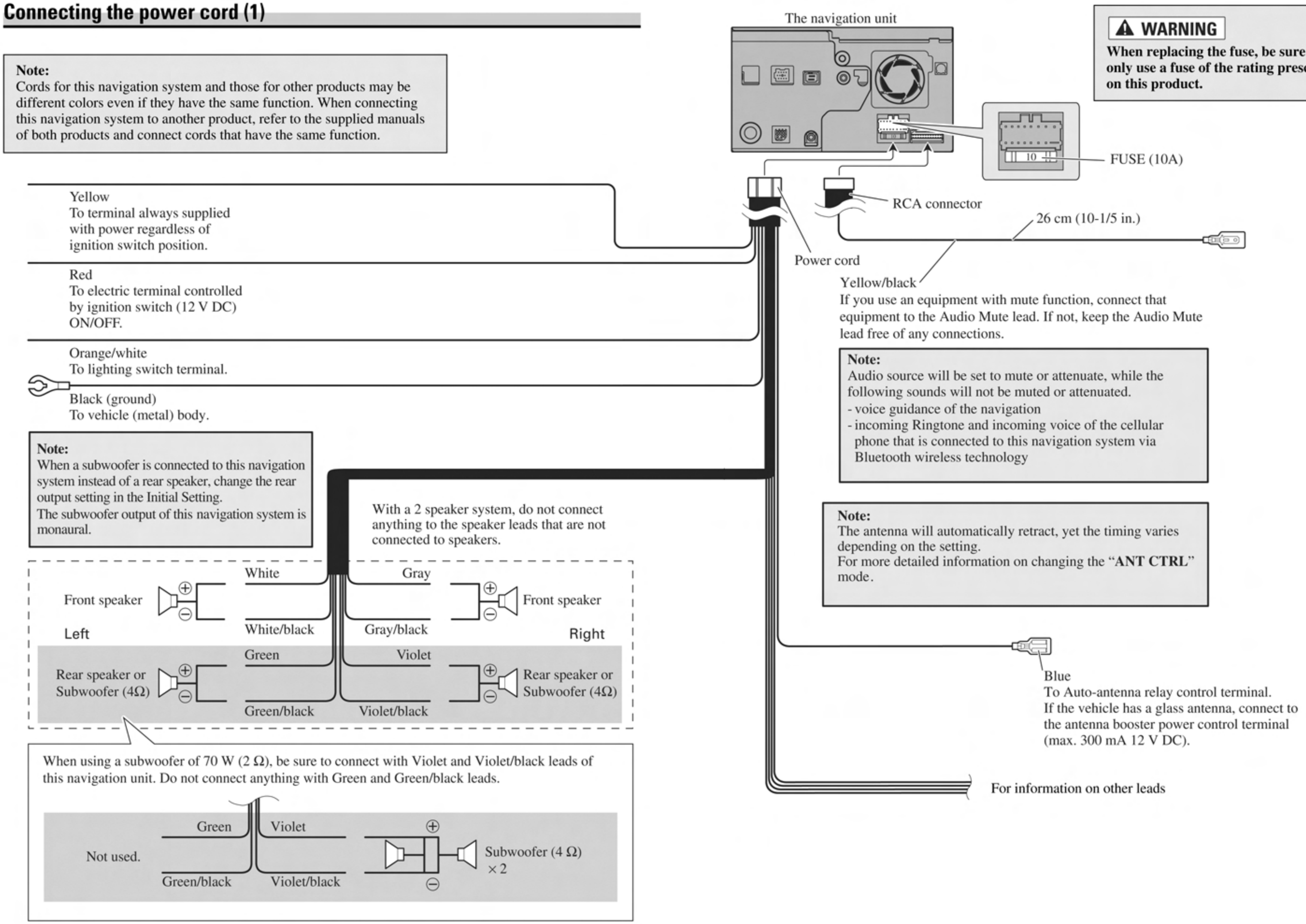
- **To avoid the risk of accident and the potential violation of applicable laws, this product should never be used while the vehicle is being driven except for navigation purposes. And, also Rear Displays should not be in a location where it is a visible distraction to the driver.**
- **In some countries, or states the viewing of images on a display inside a vehicle even by persons other than the driver may be illegal. Where such regulations apply they must be obeyed and this product's video source should not be used.**

Note:
The XM tuner and SIRIUS satellite radio tuner will not receive their service when you drive outside of their coverage area.

Connecting the power cord (1)

Note:
Cords for this navigation system and those for other products may be different colors even if they have the same function. When connecting this navigation system to another product, refer to the supplied manuals of both products and connect cords that have the same function.

⚠ WARNING
When replacing the fuse, be sure to only use a fuse of the rating prescribed on this product.



Yellow
To terminal always supplied with power regardless of ignition switch position.

Red
To electric terminal controlled by ignition switch (12 V DC) ON/OFF.

Orange/white
To lighting switch terminal.

Black (ground)
To vehicle (metal) body.

Yellow/black
If you use an equipment with mute function, connect that equipment to the Audio Mute lead. If not, keep the Audio Mute lead free of any connections.

Note:
Audio source will be set to mute or attenuate, while the following sounds will not be muted or attenuated.
- voice guidance of the navigation
- incoming Ringtone and incoming voice of the cellular phone that is connected to this navigation system via Bluetooth wireless technology

Note:
The antenna will automatically retract, yet the timing varies depending on the setting.
For more detailed information on changing the "**ANT CTRL**" mode.

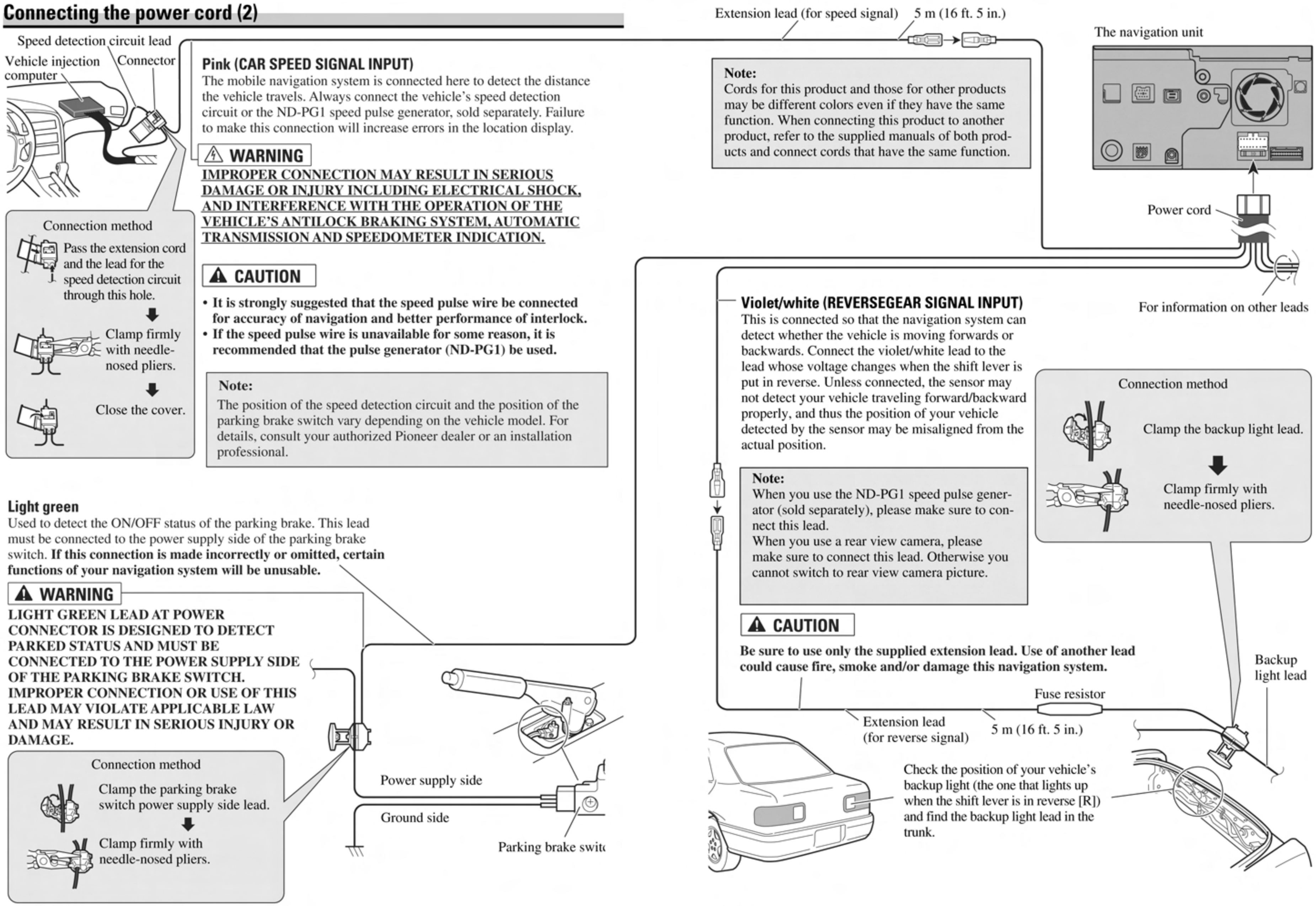
Blue
To Auto-antenna relay control terminal.
If the vehicle has a glass antenna, connect to the antenna booster power control terminal (max. 300 mA 12 V DC).

Note:
When a subwoofer is connected to this navigation system instead of a rear speaker, change the rear output setting in the Initial Setting.
The subwoofer output of this navigation system is monaural.

With a 2 speaker system, do not connect anything to the speaker leads that are not connected to speakers.

When using a subwoofer of 70 W (2 Ω), be sure to connect with Violet and Violet/black leads of this navigation unit. Do not connect anything with Green and Green/black leads.

Connecting the power cord (2)


Speed detection circuit lead
Vehicle injection computer
Connector
Extension lead (for speed signal)
5 m (16 ft. 5 in.)
The navigation unit
Power cord
For information on other leads
Power supply side
Ground side
Parking brake swit
Fuse resistor
Extension lead (for reverse signal)
5 m (16 ft. 5 in.)
Backup light lead

Connection method

Pass the extension cord and the lead for the speed detection circuit through this hole.

↓

Clamp firmly with needle-nosed pliers.

↓

Close the cover.

Pink (CAR SPEED SIGNAL INPUT)

The mobile navigation system is connected here to detect the distance the vehicle travels. Always connect the vehicle's speed detection circuit or the ND-PG1 speed pulse generator, sold separately. Failure to make this connection will increase errors in the location display.

⚠ **WARNING**

IMPROPER CONNECTION MAY RESULT IN SERIOUS DAMAGE OR INJURY INCLUDING ELECTRICAL SHOCK, AND INTERFERENCE WITH THE OPERATION OF THE VEHICLE'S ANTILOCK BRAKING SYSTEM, AUTOMATIC TRANSMISSION AND SPEEDOMETER INDICATION.

⚠ **CAUTION**

- **It is strongly suggested that the speed pulse wire be connected for accuracy of navigation and better performance of interlock.**
- **If the speed pulse wire is unavailable for some reason, it is recommended that the pulse generator (ND-PG1) be used.**

Note:
The position of the speed detection circuit and the position of the parking brake switch vary depending on the vehicle model. For details, consult your authorized Pioneer dealer or an installation professional.

Note:
Cords for this product and those for other products may be different colors even if they have the same function. When connecting this product to another product, refer to the supplied manuals of both products and connect cords that have the same function.

Violet/white (REVERSEGEAR SIGNAL INPUT)

This is connected so that the navigation system can detect whether the vehicle is moving forwards or backwards. Connect the violet/white lead to the lead whose voltage changes when the shift lever is put in reverse. Unless connected, the sensor may not detect your vehicle traveling forward/backward properly, and thus the position of your vehicle detected by the sensor may be misaligned from the actual position.

Note:
When you use the ND-PG1 speed pulse generator (sold separately), please make sure to connect this lead.
When you use a rear view camera, please make sure to connect this lead. Otherwise you cannot switch to rear view camera picture.

⚠ **CAUTION**

Be sure to use only the supplied extension lead. Use of another lead could cause fire, smoke and/or damage this navigation system.

Connection method

Clamp the backup light lead.

↓

Clamp firmly with needle-nosed pliers.

Check the position of your vehicle's backup light (the one that lights up when the shift lever is in reverse [R]) and find the backup light lead in the trunk.

Light green

Used to detect the ON/OFF status of the parking brake. This lead must be connected to the power supply side of the parking brake switch. **If this connection is made incorrectly or omitted, certain functions of your navigation system will be unusable.**

⚠ **WARNING**

LIGHT GREEN LEAD AT POWER CONNECTOR IS DESIGNED TO DETECT PARKED STATUS AND MUST BE CONNECTED TO THE POWER SUPPLY SIDE OF THE PARKING BRAKE SWITCH. IMPROPER CONNECTION OR USE OF THIS LEAD MAY VIOLATE APPLICABLE LAW AND MAY RESULT IN SERIOUS INJURY OR DAMAGE.

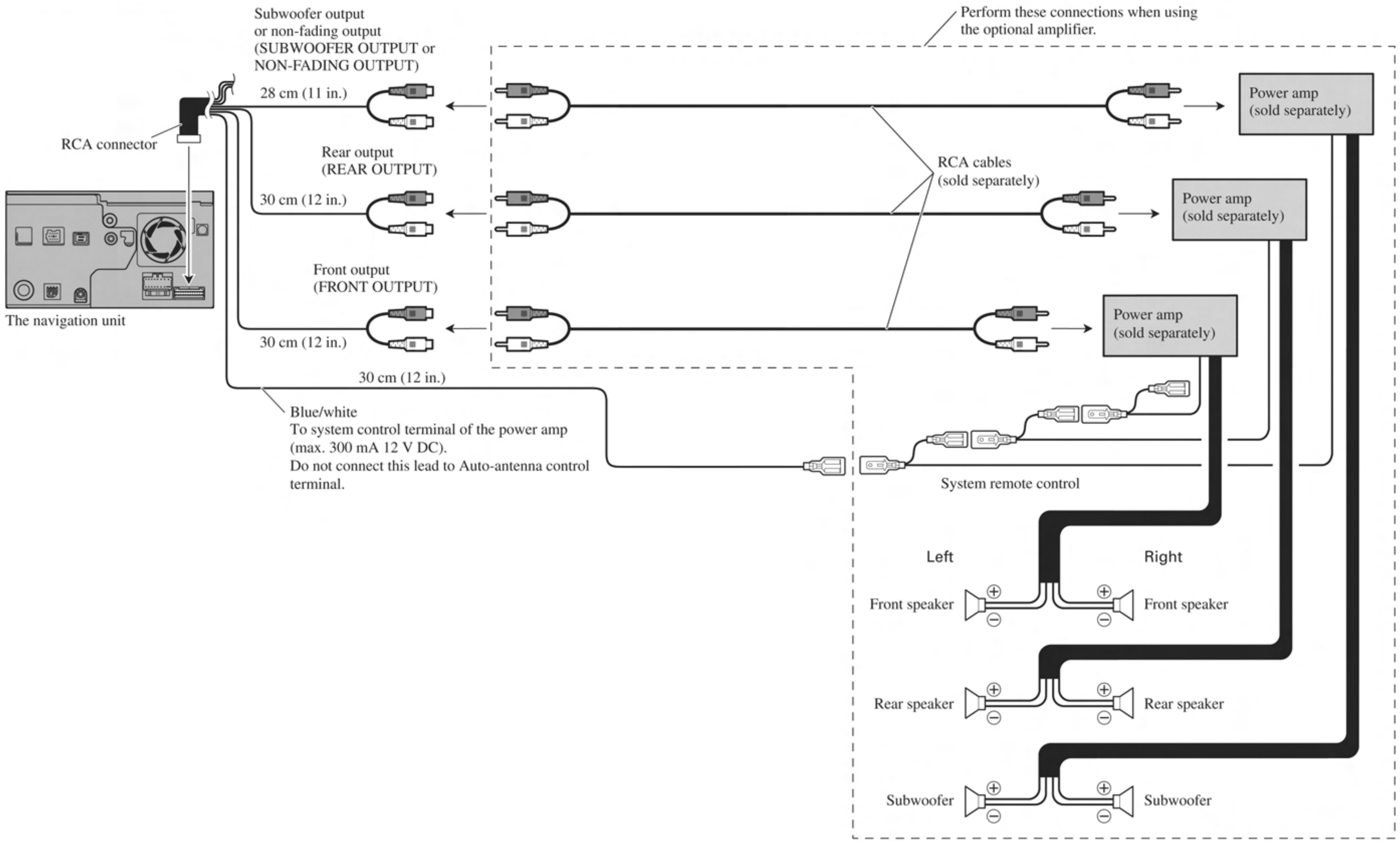
Connection method

Clamp the parking brake switch power supply side lead.

↓

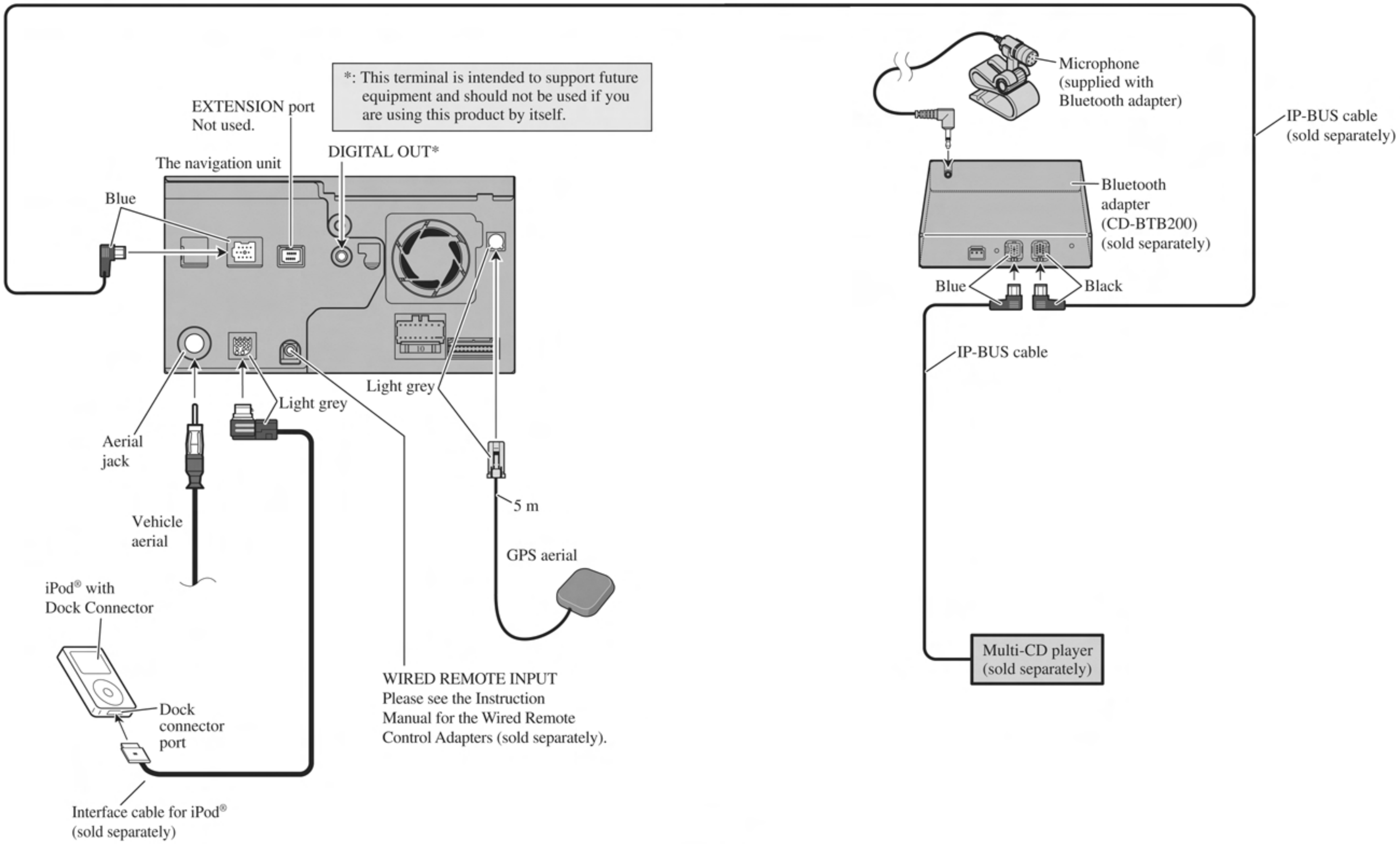
Clamp firmly with needle-nosed pliers.

When connecting to separately sold power amp



Note:
You can change the RCA output of the subwoofer depending on your subwoofer system.

Connecting the system



*: This terminal is intended to support future equipment and should not be used if you are using this product by itself.

⚠ WARNING

- **To avoid the risk of accident and the potential violation of applicable laws, this product should never be used while the vehicle is being driven except for navigation purposes. And, also Rear Displays should not be in a location where it is a visible distraction to the driver.**
- **In some countries, the viewing of images on a display inside a vehicle even by persons other than the driver may be illegal. Where such regulations apply they must be obeyed and this product’s video source should not be used.**

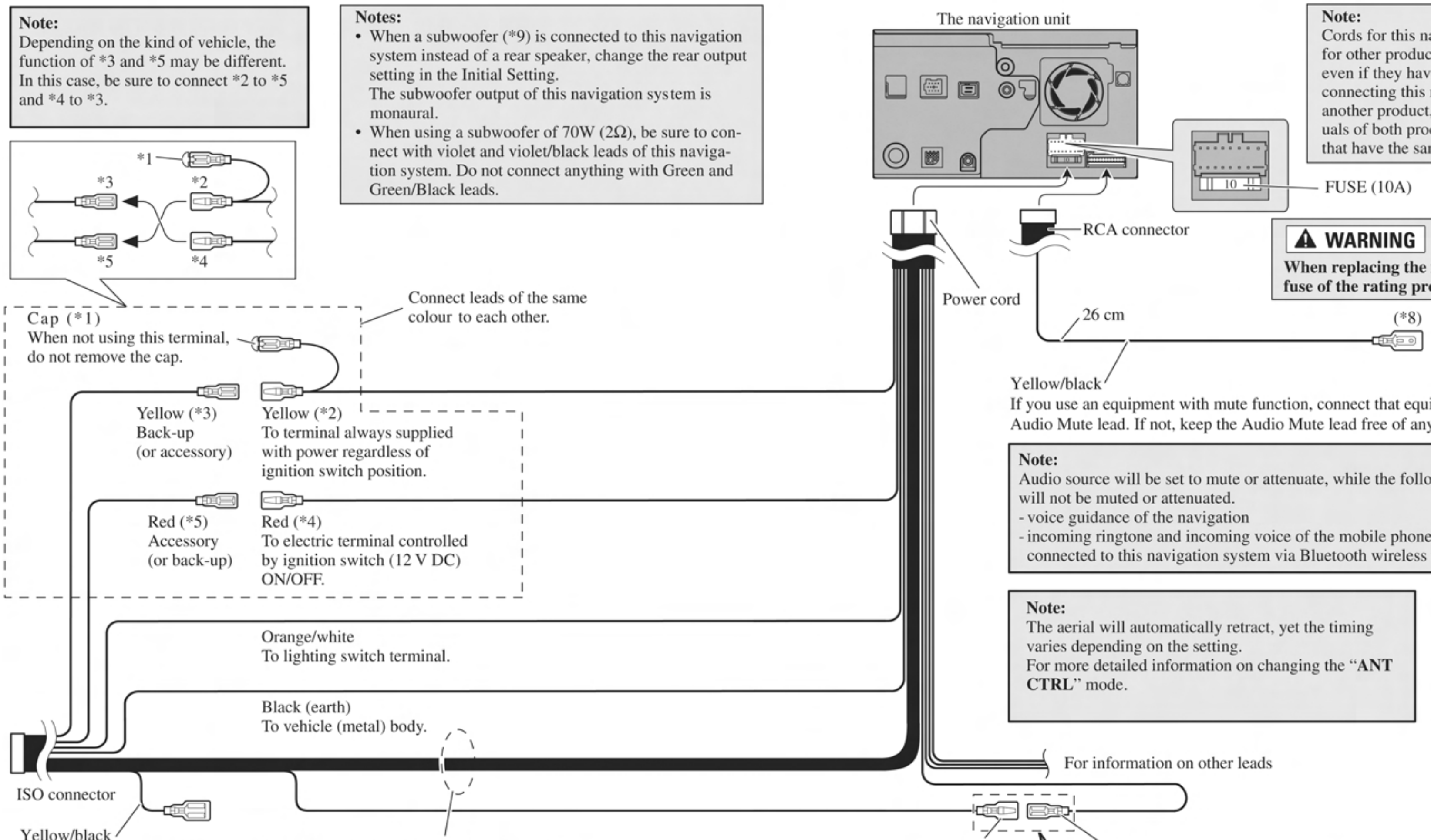
Connecting the power cord (1)

Note:
Depending on the kind of vehicle, the function of *3 and *5 may be different. In this case, be sure to connect *2 to *5 and *4 to *3.

Notes:
- When a subwoofer (*9) is connected to this navigation system instead of a rear speaker, change the rear output setting in the Initial Setting.
  The subwoofer output of this navigation system is monaural.
- When using a subwoofer of 70W (2Ω), be sure to connect with violet and violet/black leads of this navigation system. Do not connect anything with Green and Green/Black leads.

Note:
Cords for this navigation system and those for other products may be different colours even if they have the same function. When connecting this navigation system to another product, refer to the supplied manuals of both products and connect cords that have the same function.

⚠ WARNING
When replacing the fuse, be sure to only use a fuse of the rating prescribed on this product.



Cap (*1)
When not using this terminal, do not remove the cap.

Connect leads of the same colour to each other.

Yellow (*3)
Back-up
(or accessory)

Yellow (*2)
To terminal always supplied with power regardless of ignition switch position.

Red (*5)
Accessory
(or back-up)

Red (*4)
To electric terminal controlled by ignition switch (12 V DC) ON/OFF.

Orange/white
To lighting switch terminal.

Black (earth)
To vehicle (metal) body.

Yellow/black
If you use an equipment with mute function, connect that equipment to the Audio Mute lead. If not, keep the Audio Mute lead free of any connections.

Note:
Audio source will be set to mute or attenuate, while the following sounds will not be muted or attenuated.
- voice guidance of the navigation
- incoming ringtone and incoming voice of the mobile phone that is connected to this navigation system via Bluetooth wireless technology

Note:
The aerial will automatically retract, yet the timing varies depending on the setting.
For more detailed information on changing the "**ANT CTRL**" mode.

For information on other leads

Yellow/black
If the vehicle can send a mute signal to this terminal, the mute function can be activated on this navigation system when the terminal is connected to *8.

Note:
In some vehicles, the ISO connector may be divided into two. In this case, be sure to connect to both connectors.

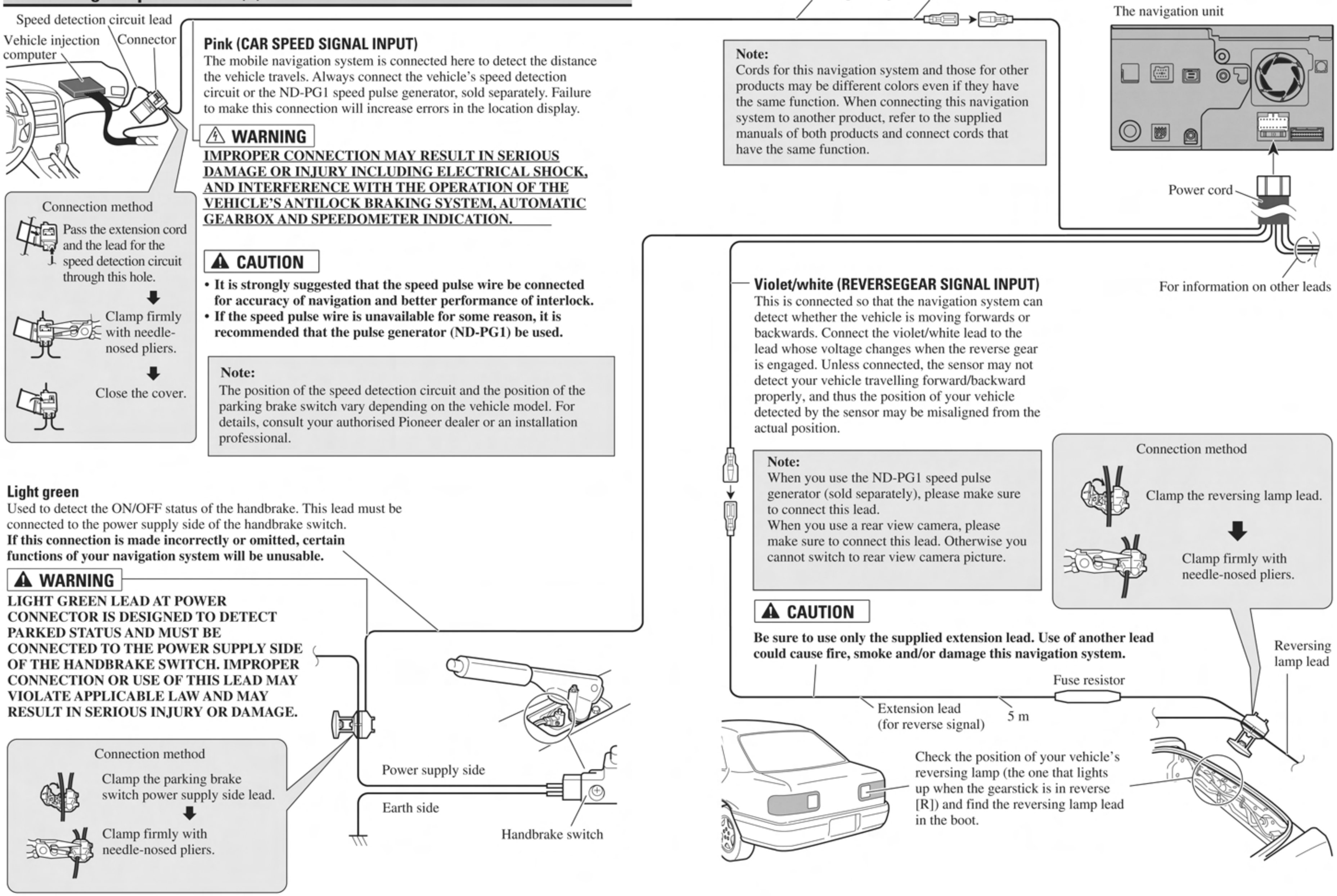
Speaker leads

White:	Front left ⊕
White/black:	Front left ⊖
Grey:	Front right ⊕
Grey/black:	Front right ⊖
Green:	Rear left ⊕ or Subwoofer ⊕ (*9)
Green/black:	Rear left ⊖ or Subwoofer ⊖ (*9)
Violet:	Rear right ⊕ or Subwoofer ⊕ (*9)
Violet/black:	Rear right ⊖ or Subwoofer ⊖ (*9)

Blue (*7)
To Auto-aerial relay control terminal
(max. 300 mA 12 V DC).

The pin position of the ISO connector will differ depending on the type of vehicle. Connect *6 and *7 when Pin 5 is an aerial control type. In other types of vehicle, never connect *6 and *7.

Connecting the power cord (2)


Extension lead (for speed signal)
5 m
The navigation unit
Power cord
For information on other leads
Speed detection circuit lead
Vehicle injection computer
Connector
Power supply side
Earth side
Handbrake switch
Fuse resistor
Extension lead (for reverse signal)
5 m
Reversing lamp lead

Pink (CAR SPEED SIGNAL INPUT)
The mobile navigation system is connected here to detect the distance the vehicle travels. Always connect the vehicle's speed detection circuit or the ND-PG1 speed pulse generator, sold separately. Failure to make this connection will increase errors in the location display.

⚠ **WARNING**

IMPROPER CONNECTION MAY RESULT IN SERIOUS DAMAGE OR INJURY INCLUDING ELECTRICAL SHOCK, AND INTERFERENCE WITH THE OPERATION OF THE VEHICLE'S ANTILOCK BRAKING SYSTEM, AUTOMATIC GEARBOX AND SPEEDOMETER INDICATION.

⚠ **CAUTION**

- **It is strongly suggested that the speed pulse wire be connected for accuracy of navigation and better performance of interlock.**
- **If the speed pulse wire is unavailable for some reason, it is recommended that the pulse generator (ND-PG1) be used.**

Note:
The position of the speed detection circuit and the position of the parking brake switch vary depending on the vehicle model. For details, consult your authorised Pioneer dealer or an installation professional.

Connection method

Pass the extension cord and the lead for the speed detection circuit through this hole.

Clamp firmly with needle-nosed pliers.

Close the cover.

Light green
Used to detect the ON/OFF status of the handbrake. This lead must be connected to the power supply side of the handbrake switch.
If this connection is made incorrectly or omitted, certain functions of your navigation system will be unusable.

⚠ **WARNING**

LIGHT GREEN LEAD AT POWER CONNECTOR IS DESIGNED TO DETECT PARKED STATUS AND MUST BE CONNECTED TO THE POWER SUPPLY SIDE OF THE HANDBRAKE SWITCH. IMPROPER CONNECTION OR USE OF THIS LEAD MAY VIOLATE APPLICABLE LAW AND MAY RESULT IN SERIOUS INJURY OR DAMAGE.

Connection method

Clamp the parking brake switch power supply side lead.

Clamp firmly with needle-nosed pliers.

Note:
Cords for this navigation system and those for other products may be different colors even if they have the same function. When connecting this navigation system to another product, refer to the supplied manuals of both products and connect cords that have the same function.

Violet/white (REVERSEGEAR SIGNAL INPUT)
This is connected so that the navigation system can detect whether the vehicle is moving forwards or backwards. Connect the violet/white lead to the lead whose voltage changes when the reverse gear is engaged. Unless connected, the sensor may not detect your vehicle travelling forward/backward properly, and thus the position of your vehicle detected by the sensor may be misaligned from the actual position.

Note:
When you use the ND-PG1 speed pulse generator (sold separately), please make sure to connect this lead.
When you use a rear view camera, please make sure to connect this lead. Otherwise you cannot switch to rear view camera picture.

⚠ **CAUTION**

Be sure to use only the supplied extension lead. Use of another lead could cause fire, smoke and/or damage this navigation system.

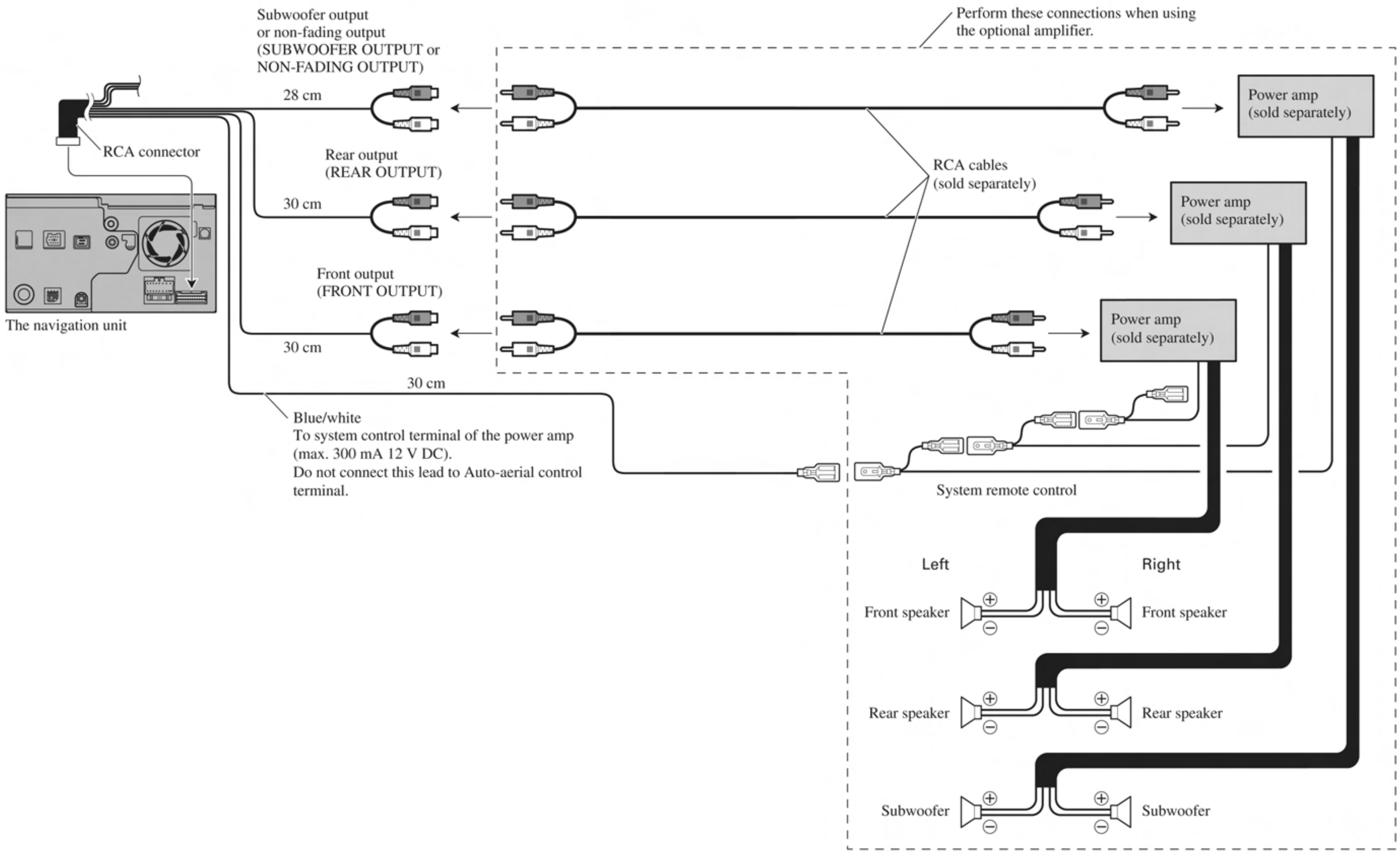
Connection method

Clamp the reversing lamp lead.

Clamp firmly with needle-nosed pliers.

Check the position of your vehicle's reversing lamp (the one that lights up when the gearstick is in reverse [R]) and find the reversing lamp lead in the boot.

When connecting to separately sold power amp



Note:
You can change the RCA output of the subwoofer depending on your subwoofer system.

● Jigs List

Name	Jig No.	Remarks
40P FFC BBR	GGD1284	DVD Core Unit (CN2001) <---> Navi Mother Unit (CN2)
40P FFC BBR	GGD1284	DVD Core Unit (CN1901) <---> Navi Mother Unit (CN2057)
20P Extension Cable	GGD1327	Navi Mother Unit (CN2068) <---> AV Unit (CN1652)
80P FPC	GGD1406	Navi Mother Unit (CN2055) <---> AV Unit (CN1711)
40P FFC BB	GGD1170	Monitor Unit (CN5001) <---> AV Unit (CN1661)
TEST DISC	GGV1303	Operation check
Remote Control Uint	CXC6317	Operation for adjustment
TORX driver (T2)	GGK1095	SKEW adjustment (DVD)
Bond	GEM1033	SKEW adjustment (DVD)
Bond (Produced by THREE BOND)	1401M	SKEW adjustment (DVD)
TEST DISC	GGV1018	SKEW adjustment (DVD)

● Grease List

Name	Grease No.	Remarks
Grease	GEM1024	DVD Mechanism Module
Grease	GEM1043	DVD Mechanism Module
Grease	GEM1045	DVD Mechanism Module
Grease	GEM1050	DVD Mechanism Module

Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
DVD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

Portions to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008

Pioneer sound.vision.soul

Service Manual

ORDER NO.
CRT3896

DVD MECHANISM MODULE(MS5)

CX-3212

● This service manual describes the operation of the DVD mechanism module incorporated in models listed in the table below.
● When performing repairs use this manual together with the specific manual for model under repair.

Model	Service manual	DVD Mechanism Module
AVIC-D3/XU/UC AVIC-D3/XU/EW5	CRT3879	CXK6601

CONTENTS

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

K-ZZU. FEB. 2007 Printed in Japan

1. CIRCUIT DESCRIPTIONS

1. Front end section (MN2DS0016AAUB : IC1501)

MN2DS0016AAUB is a 1 chip LSI for DVD-Player. A DVD-Player system can be constructed by connecting this LSI, driver IC, SDRAM, Flash-ROM, Audio-DAC, etc.
This LSI includes a front end (SODC/FE) which executes RF signal processing, servo processing and decode processing, a back end (AV decoder/BE) which executes video decode processing such as MPEG1/MPEG2/JPEG and audio decode processing such as DVD-Audio/Dolby Digital^{2} /DTS/MP3, and a system controller which controls the system.
The front end section realizes optical head signal computation processing and RF signal processing, digital signal processing (16-8 demodulation, error correction) for DVD-ROM playback according to the DVD specifications, digital signal processing of CD-DA/CD-ROM (error correction), AV decoder transfer, servo control, spindle motor control and seek control.
In the case of MN2DS0016AAUB, the front end servo system waveforms, such as FE, TE and AS, are not observed as in the case of DVD mechanism module (MS4) CX-3183. Please pay attention.

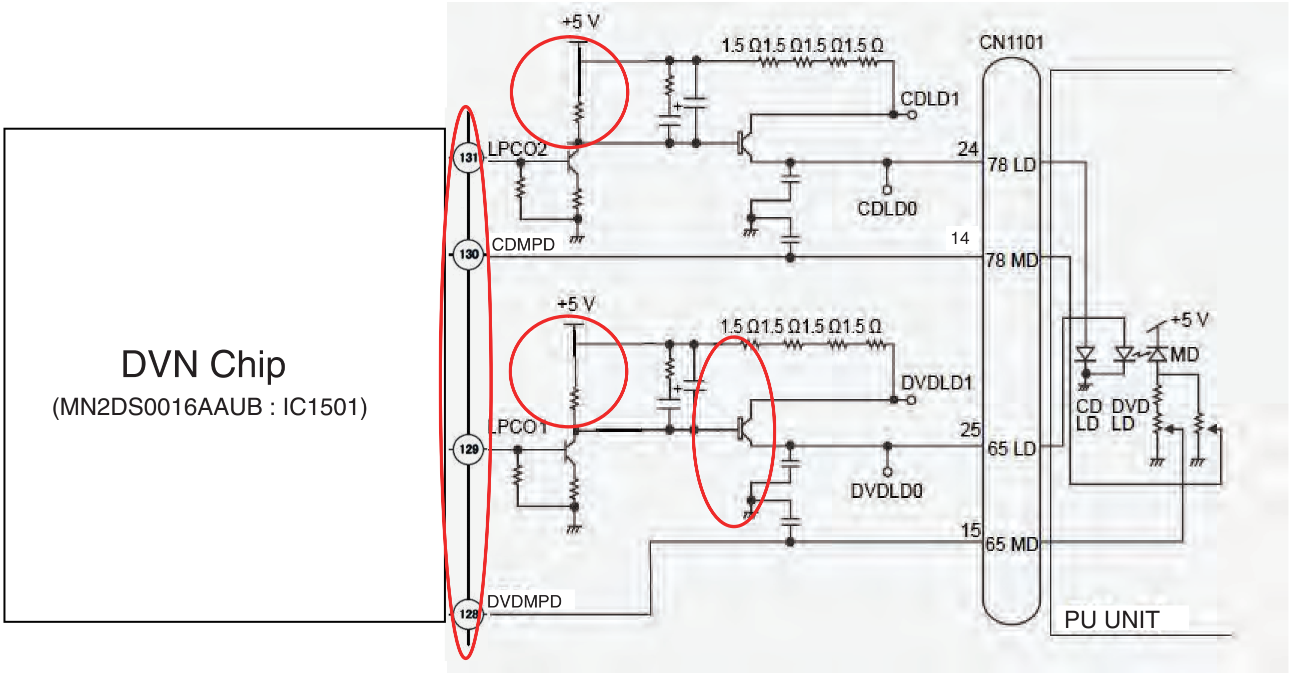
1.1 Analog block (MN2DS0016AAUB : IC1501)

The functions of the analog block are as described below.

1. Reference power circuit
2. SERVO system/DPD system signal processing circuit
   Gain switching amplifier and Low Pass Filter (LPF)
3. RF signal processing circuit
   RF adding circuit, circuit to make inline, Variable Gain Amplifier (VGA) circuit
4. Laser power control (LPC) circuit
5. A/D converter for SERVO (10 bit, DPD system-4ch), PWM

1.1.1 APC circuit

The optical output of the laser diode (LD) has a large negative temperature characteristic.
Therefore, if the LD is driven by a constant current, a constant optical output cannot be obtained.
APC circuit is a circuit to control the current so that the output at the monitor diode (MD) will be constant.
MN2DS0016AAUB includes 2 types of APC circuit, one for DVD and the other for CD.
The LD current can be obtained by dividing the measured voltage between DVDLD1 (CDLD1) and 5 V by 6 Ω (1.5 Ω x 4=6 Ω), in the case of DVD (CD). It will be approximately 50 mA (45 mA) in the case of DVD (CD).
The potential difference between DVDLD1(CDLD1) and 5 V is set to approx. 300 mV(270 mV).

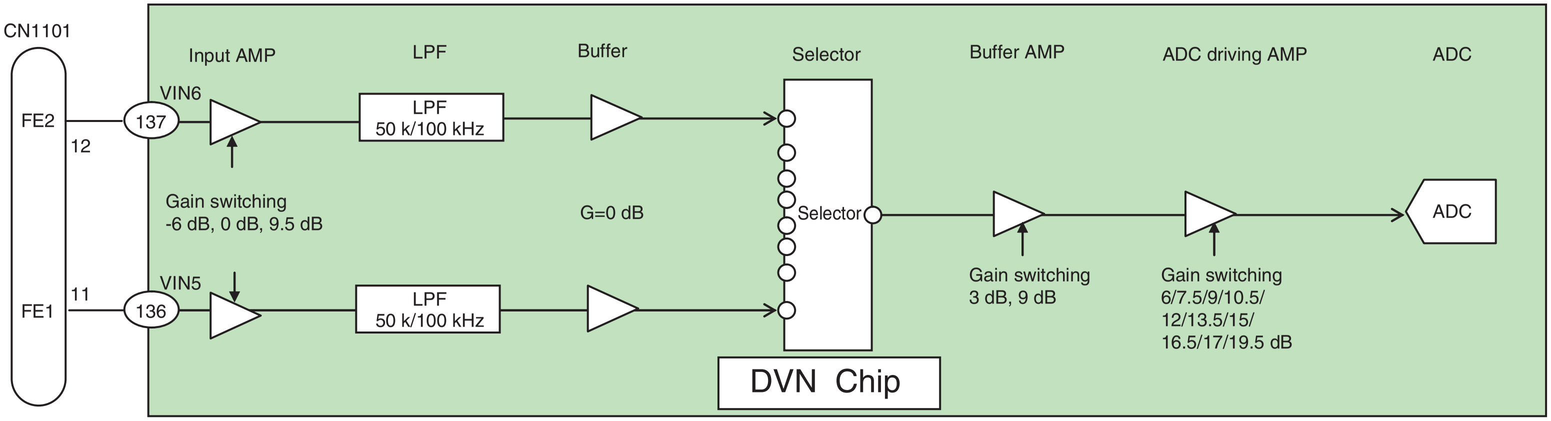


1.1.2 FE forming circuit

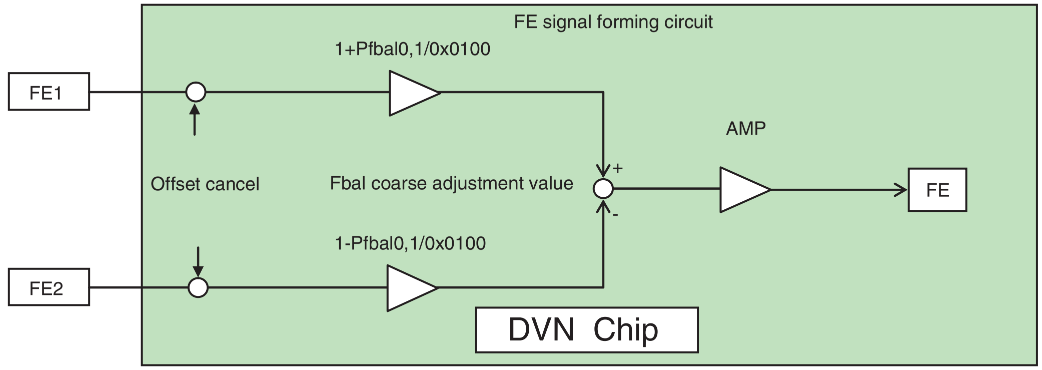
Focus error (FE) forming circuit

The signal from PU, FE1 and FE2, are AD converted inside IC1501 and captured. After that, a differential is obtained by taking the offset cancellation into consideration, and FE is obtained.

FE = (FE1) - (FE2)



After 10 bit ADC



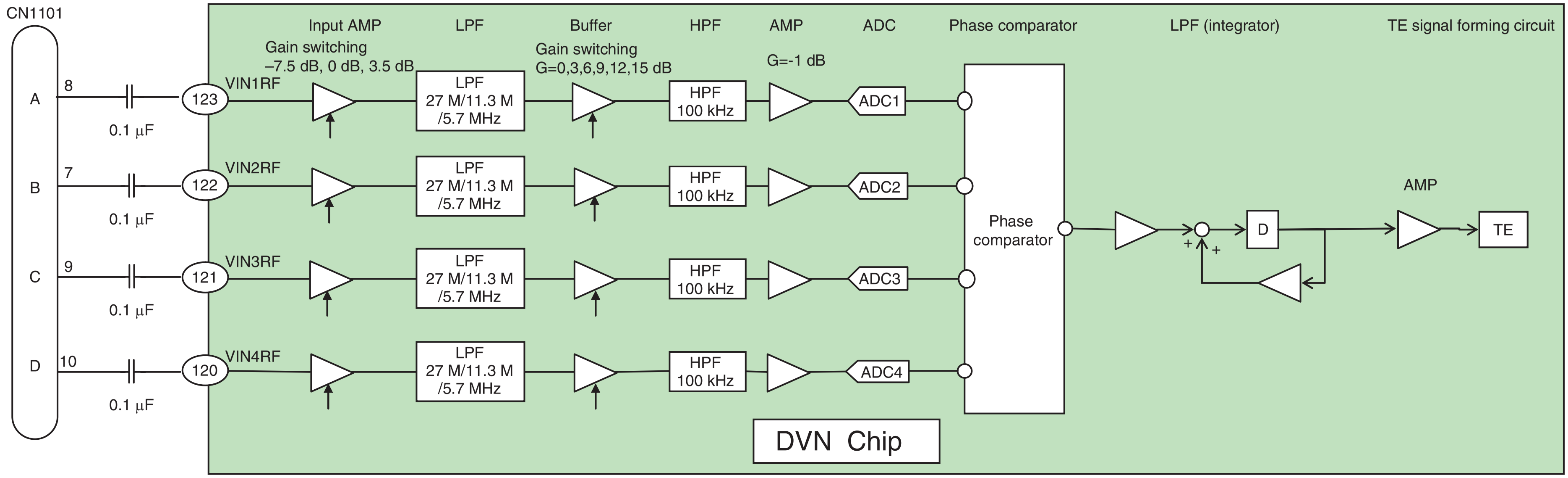
1.1.3 TE forming circuit

Tracking error (TE) forming circuit

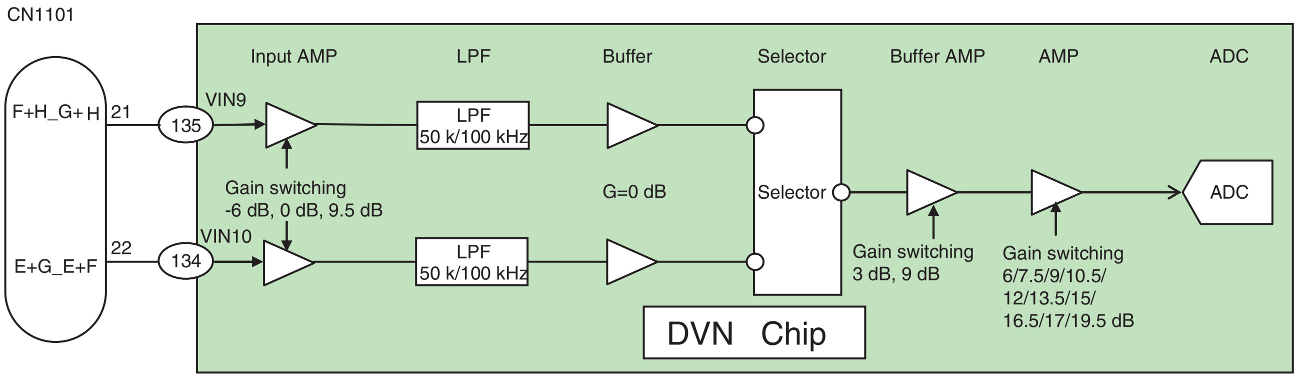
In the case of a DVD, the phase difference method is used for TE forming, and the TE is formed from the phase difference among (A+C) and (B+D).

In the case of a CD, 3 beam method is used, and after entering the signal into a variable amplifier for tracking offset adjustment via an external resistor, it is AD converted, and a TE is formed by the equation of TE=(E+G_E+F)-(F+H_G+H).

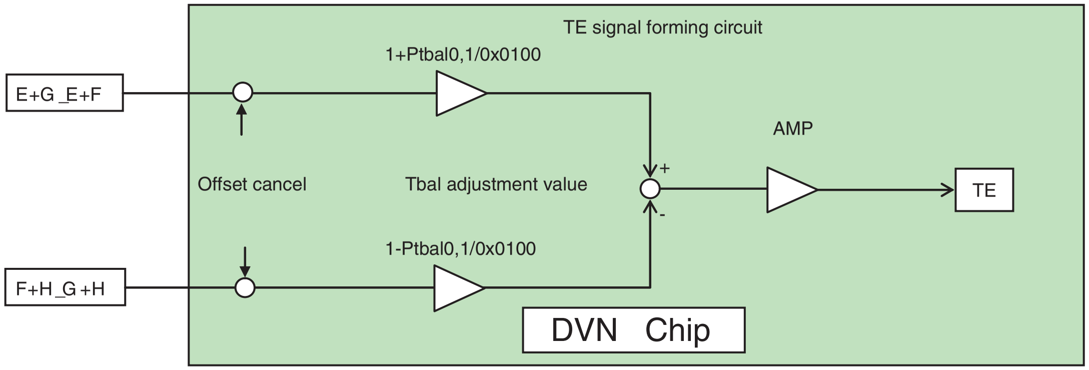
- DVD (phase difference TE)



- CD (3 beam TE)



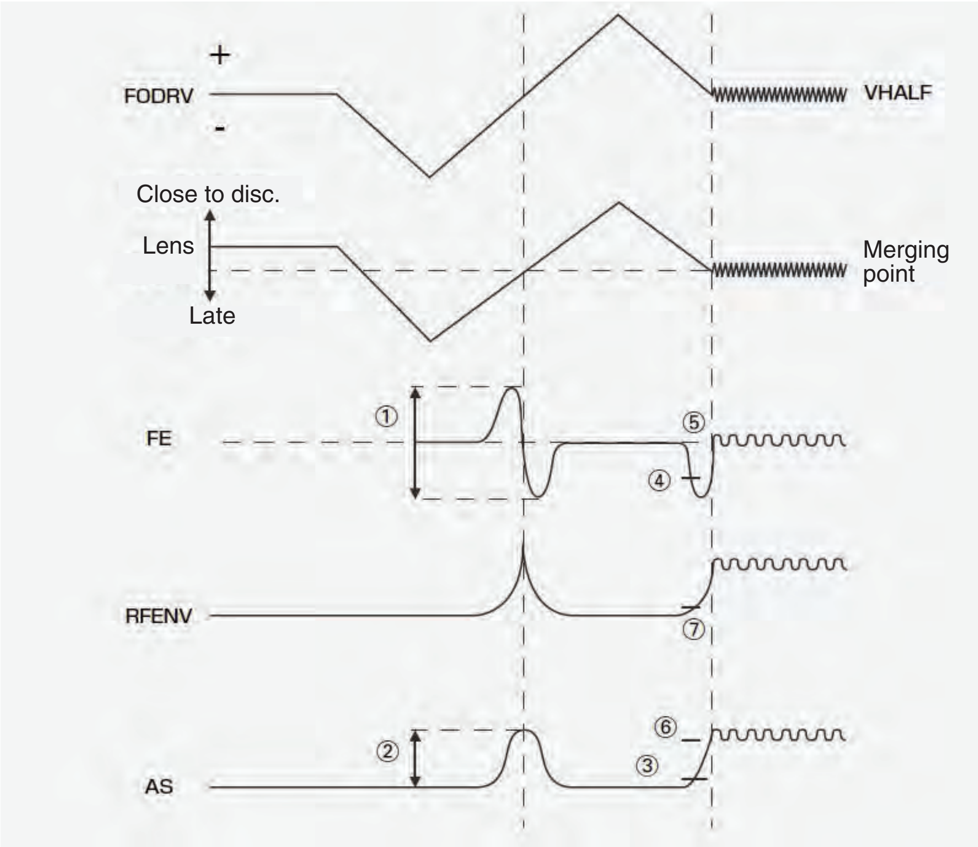
After 10 bit ADC



1.2 Servo block (MN2DS0016AAUB : IC1501)

At the servo block, focusing, tracking, servo control of traverse, spindle motor control and seek control are performed.

1.2.1 Focus close



After issuing the focus close command, both the DVD and the CD will perform the following processing.

1. Measurement and optimization of the signal level.
   First the PU lens is driven in the direction getting away from the disc, then it is driven in the direction getting close to the disc. At this time, each signal level of FE, AS and RFENV are measured at the focused focal point that the lens passes, and the levels of FE and AS are optimized. (1 and 2 in the figure)
2. Focus adjustment
   Next, after detecting the drawing level of FE and AS by driving the lens away from the disc, the focus loop filter is activated and the focus is drawn. (3~6)
3. Confirmation of adjustment
   Confirm the drawing at the signal level of AS and RFENV. (6, 7)
   The signal levels of FE, AS and RFENV and the focus drive voltage can be checked by the focus search in the test mode.

1.2.2 Tracking close

After issuing the tracking close command, both the DVD and the CD will perform the following processing.

1. Tracking brake
   1/2 cycle of the track cross is measured and if the cycle is within the specified range, the brake pulse is output.
   The output direction of the brake pulse is determined by the phase relationship of the OFTR and the TKC (binary signal of TE) signals. When it is confirmed that the swinging of the lens against the disc has been controlled, braking will be stopped and enters into drawing. If the drawing conditions are not met within 10 msec, after the brake output, the brake will be ended and entered into drawing.
2. Tracking adjustment
   Tracking drive hold processing by the OFTR signal will be performed.
3. Confirmation of adjustment
   Checking is made that the number of track jumps within the specified period of time are at the designated numbers or less. The time out for confirmation of adjustment is 8.4 msec. and retry is performed by the command from the microcomputer.

1.2.3 Track jump

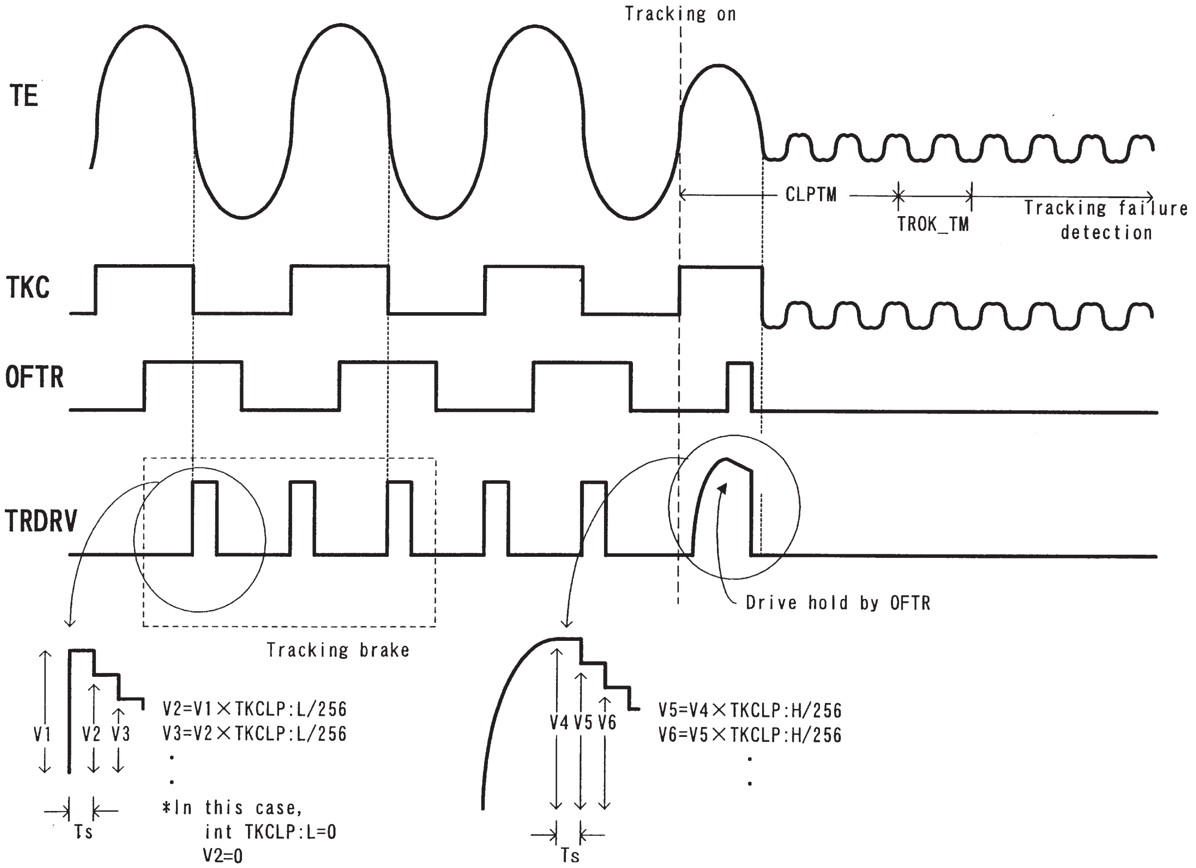
In this system, one of the three methods, interval jump, multi jump or traverse seek, is selected depending on the number of target moving tracks.

1. Interval jump
   Detailed seek can be performed to execute repeated track jump of 1 track, and it is used when the target track gets close or at the time of seek operation to the adjacent track.
2. Multi jump
   Both edges of the track cross signal TKC are counted, and track count move of the designated number is executed. Furthermore, the stepping motor is driven according to the number of jumps.
3. Traverse seek
   The stepping motor is controlled by F/W. Track count by TKC is not performed, and the stepping motor is moved according to the number of jumps. In the case of a DVD, seek is performed by maintaining the pick up at the mid point using the mid point servo by the microcomputer.
   It indicates the setting for jump switching common to DVD and CD.
   Types of target move number of jumps.

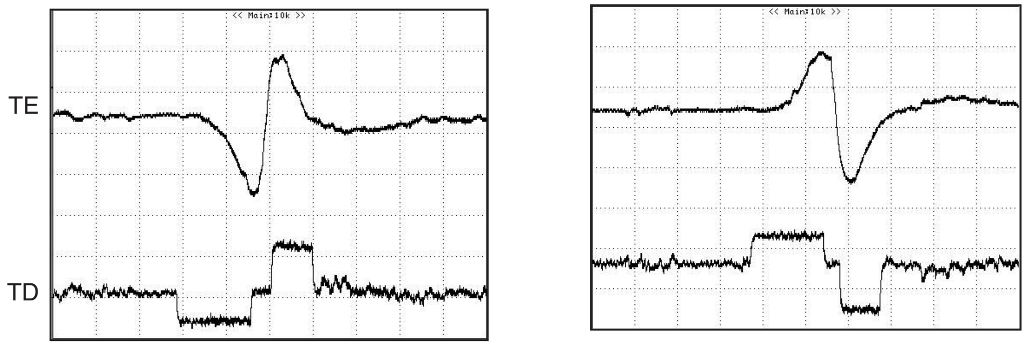
DVD	CD
1~10 Interval jump	1~10 Interval jump
11~500 Multi jump	11~400 Multi jump
501~878 Combination of multi jump and interval jump	401~780 Combination of multi jump and interval jump
879~1756 Traverse seek (short)	781~928 Traverse seek (short)
1757~ Traverse seek (long)	929~ Traverse seek (long)

The waveform of track jump is shown on the next page.

Tracking-on process

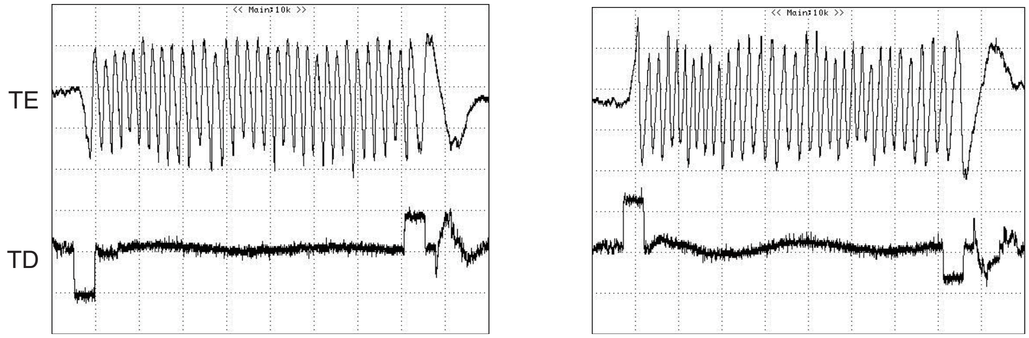


Interval jump (1 track) DVD


Outer peripheral jump

Inner peripheral jump

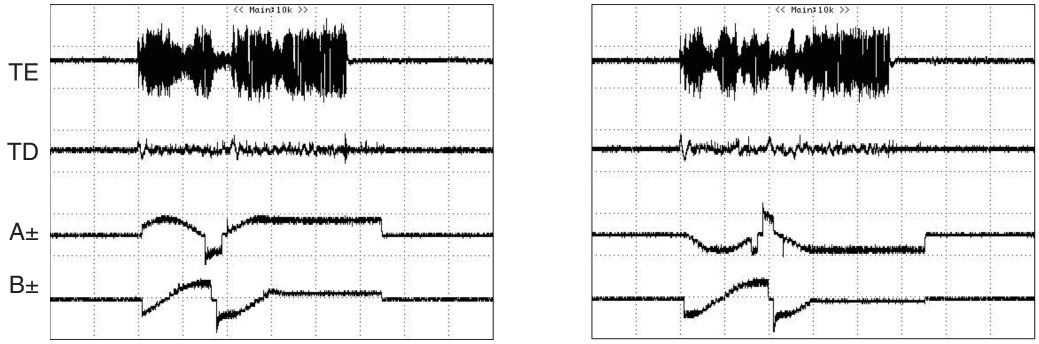
Multi jump (32 track) DVD


Outer peripheral jump

Inner peripheral jump

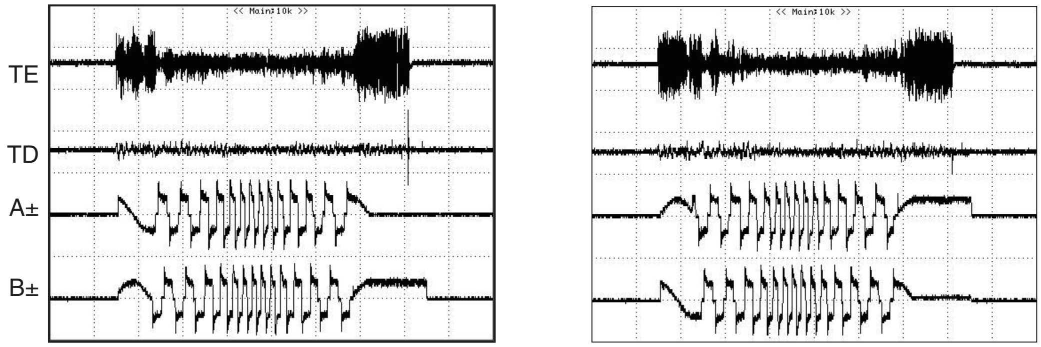
Traverse seek (900 tracks)

A ± and B ± are measured by setting the LPF of the oscilloscope to 10 kHz.


Outer peripheral jump

Inner peripheral jump

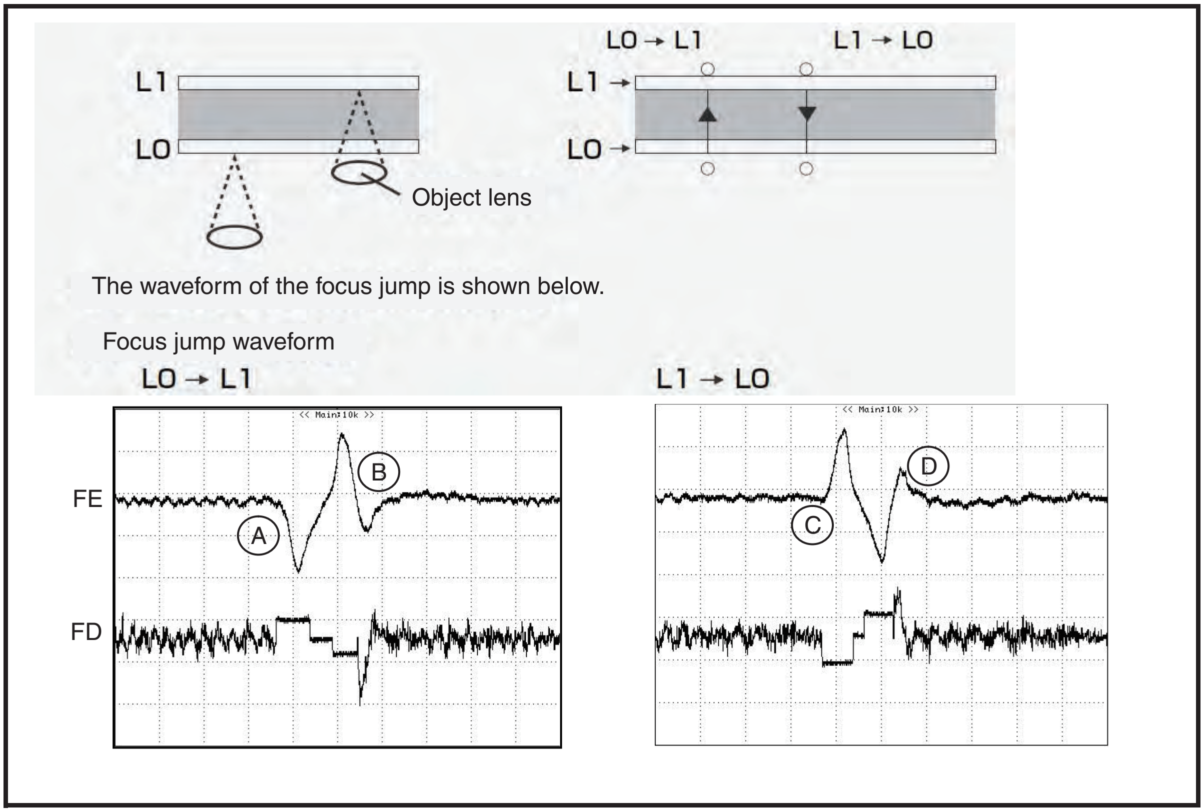
Traverse seek (10 000 tracks)


Outer peripheral jump

Inner peripheral jump

1.2.4 Focus jump

Focus jump is a function compatible to 2 layers on one side or 2 layers on both sides. Looking from the object lens, the layer close to the lens is called “layer 0” (L0) and the layer away from the lens is called “layer 1” (L1).



The flow of the focus jump is shown below.

1. The tracking is opened by the layer being played back.
2. A command is issued to execute jump to the target layer.
3. The tracking is closed at the layer after the jump and the playback is resumed.

Incidentally, the process when the jump command is issued is as described below.

1. The lens is accelerated to the target layer until the FE signal detects the focus jump acceleration end level. Acceleration will be ended by force, however, if the time for acceleration timeout has elapsed before detecting the acceleration end level.
2. The drive voltage is not output until the FE signal detects the speed reduction start level, and the lens is moved by inertia.
3. The lens speed is reduced from detection of the speed reduction start level until detection of the speed reduction end level. Speed reduction will be ended by force, however, if the time for speed reduction timeout has elapsed before detecting the speed reduction end level.

1.3 Auto adjustment function

All circuit adjustments are automated in this system.
Details of each auto adjustment are explained below.

1.3.1 VIN1, VIN2, VIN3, VIN4, VIN5, VIN6, VIN9, VIN10 offset cancel

Each signal from VIN1~6, 9 and 10 output by PU is converted to a digital signal by the AD converter in the servo block.
Offset cancel is a function to cancel input offset of the AD converter at the time of power ON.

1.3.2 VCO gain adjustment (VARI adjustment)

It has a function to absorb variation of VCO gain among individual LSI by learning so that auto adjustment is made to maintain the VCO gain at a certain level. VCO is locked against the reference frequency for learning.
And, a frequency control value (FCNT) is read, and VARI register is adjusted so that the read value becomes the same as the target FCNT value.

1.3.3 FE normalization adjustment

FE signal level measured at the time of focus close is adjusted so that it will become 190LSB at the digital equalizer input stage.

1.3.4 Tracking balance (TBAL) adjustment

At the time of focus close and tracking open, the lens is oscillated in the track direction and the balanced point where the DC offset becomes zero is searched and adjusted by using the Newton-Raphson method.

1.3.5 Learning of tracking error amplitude

At the time of focus close and tracking open, the lens is oscillated in the track direction and adjusted so that the TE amplitude level becomes 190 LSB at the digital equalizer input stage.

1.3.6 OFTR adjustment

The binary threshold level is adjusted to make the OFTR signal into a binary digit.

1.3.7 RF gain adjustment

The gain setting is adjusted by the VGA value in order to set the gain setting of the RF forming circuit to an optimum one according to the PU output.

1.3.8 Focus balance (FBAL) adjustment

The focus position is adjusted so that the RFENV will be the maximum at the time of focus close · tracking open and tracking close.

1.3.9 Focus gain adjustment, tracking gain adjustment

At the time of tracking close, a disturbance is entered into the servo loop to adjust to the target gain intersection.

1.3.10 AS normalization adjustment

The AS signal level is measured for the designated number of samples at the time of track closing, and after A/D conversion at the ADSC, it is fine adjusted to become 64 LSB at the digital equalizer input stage.

All auto adjustments can be confirmed by displaying the adjustment result in the test mode.

The list of auto adjustment coefficient

State	Coefficient	DVD	CD
Power ON	VIN1 offset	06B7~08CD	-
	VIN2 offset	06B7~08CD	-
	VIN3 offset	06B7~08CD	-
	VIN4 offset	06B7~08CD	-
	VIN5 offset	06B7~08CD	06E1~08A3
	VIN6 offset	06B7~08CD	06E1~08A3
	VIN9 offset	-	06B7~08CD
	VIN10 offset	-	06B7~08CD
F close	FE MAX	0E48~36CD	13A5~469A
	FE MIN	C933~F1B8	B966~EC5B
	AS MAX	037B~1BD9	0978~3DDC
	FE normalization	01DD~05B4	016A~045B
F close (after TBAL)	TE MAX	1518~47E0	0337~381A
	TE MIN	B820~EAE8	C7E6~FCC9
	TE normalization	017C~0320	0230~08AF
T close	F gain	0100~0400	←
	T gain	0100~0400	←
	AS normalization	024C~125F	0168~0399

Note) Coefficient values are indicated in hexadecimals. In all cases, specifications at the production line are described. For discs, TDV-582 is used for DVD and TCD-792 is used for CD.

1.4 CIRC block (MN2DS0016AAUB : IC1501)

The CIRC block includes the digital signal processing function (EFM modulation and error correction) of CD-DA and CD-ROM and the digital servo processing function of the spindle motor.

1.5 DRC block (MN2DS0016AAUB : IC1501)

The digital read channel (DRC) is equipped with A/D converter, digital equalizer (DEQ), Adaptive filter, Viterbi detector, digital PLL circuit, RISC interface and periphery circuits for reading of signal on optical disc.

1.6 ATAPI I/F(MS5 base model)

[Outline]
The ATAPI interface is a ATAPI protocol control circuit compatible to ATA/ATAPI-5.
The register of the control section can be directly accessed from the system controller, and the data transfer is made via the SODC internal bus.

◉ ATAPI interface

* When viewed from ↓ DVD-LSI.

Signal Name	Bits	I/O	Description
HDD[15:0]	16	I/O	ATAPI data input/output
NCS[1:0]	2	I	ATAPI host chip select
DA[2:0]	3	I	ATAPI host address
NIORD	1	I	ATAPI host data read out
NIOWR	1	I	ATAPI host data write
IORDY	1	O	ATAPI host ready output
DMARQ	1	O	DMA request to ATAPI host
NDMACK	1	I	DMA response from ATAPI host
INTRQ	1	O	Interrupt request to ATAPI host
NDASP]	1	O	ATAPI drive information
NPDIAG	1	O	ATAPI slave・master diagnosis
NRESET	1	I	ATAPI host hard reset
MASTER	1	I	ATAPI slave・master selection

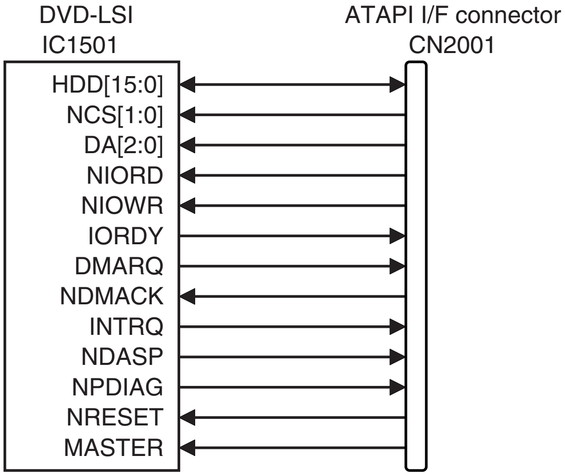
◉ ATAPI specifications

- Compatible transfer mode

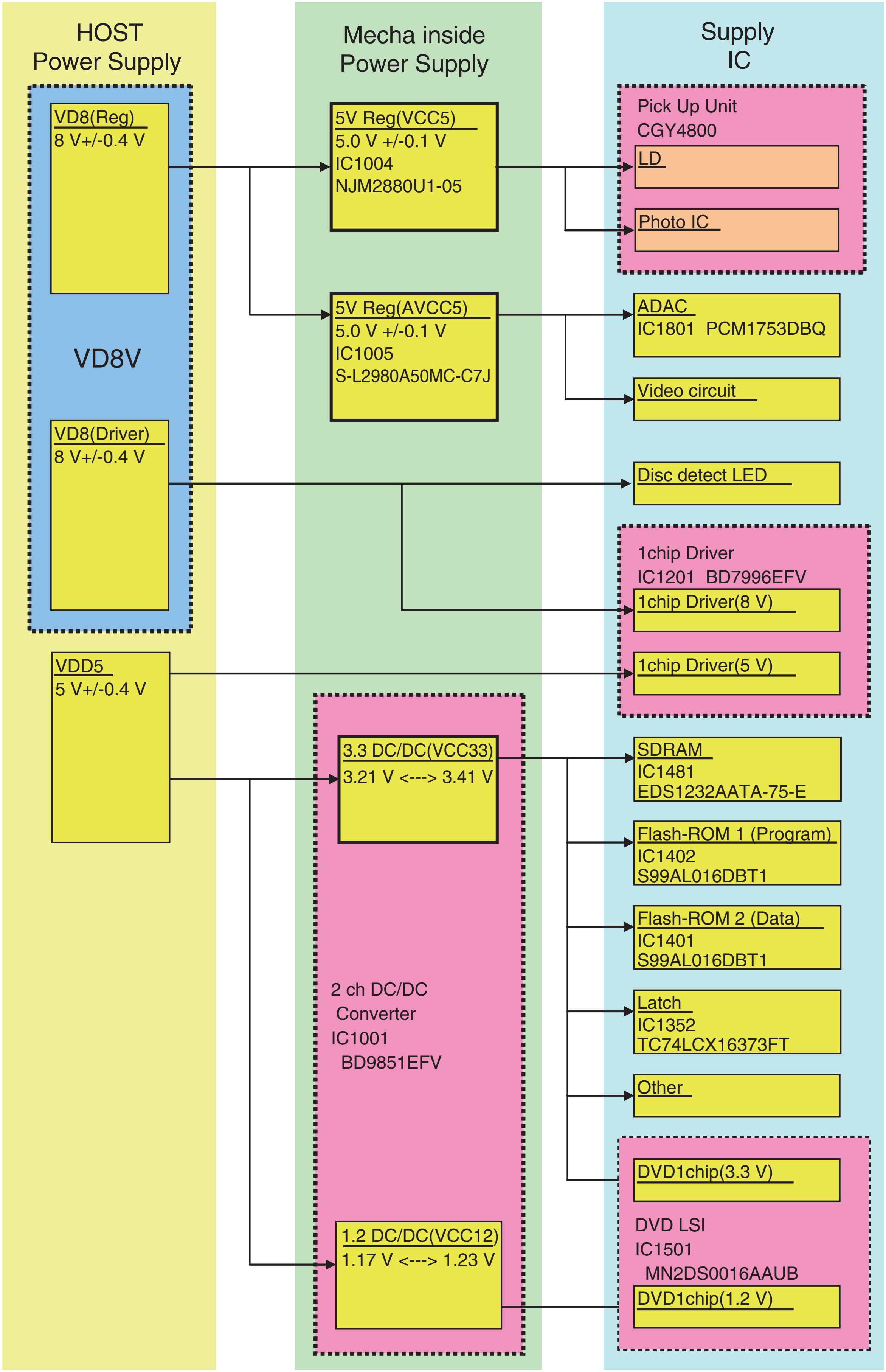
PIO	mode 0 to 4
Single word DMA	mode 0 to 2
Multi word DMA	mode 0 to 2
Ultra DMA	mode 0 to 4

- 64 Byte data FIFO for host I/F is built-in.
- Auto capturing function of ATAPI command packet is built-in.
- Master ・slave compatible

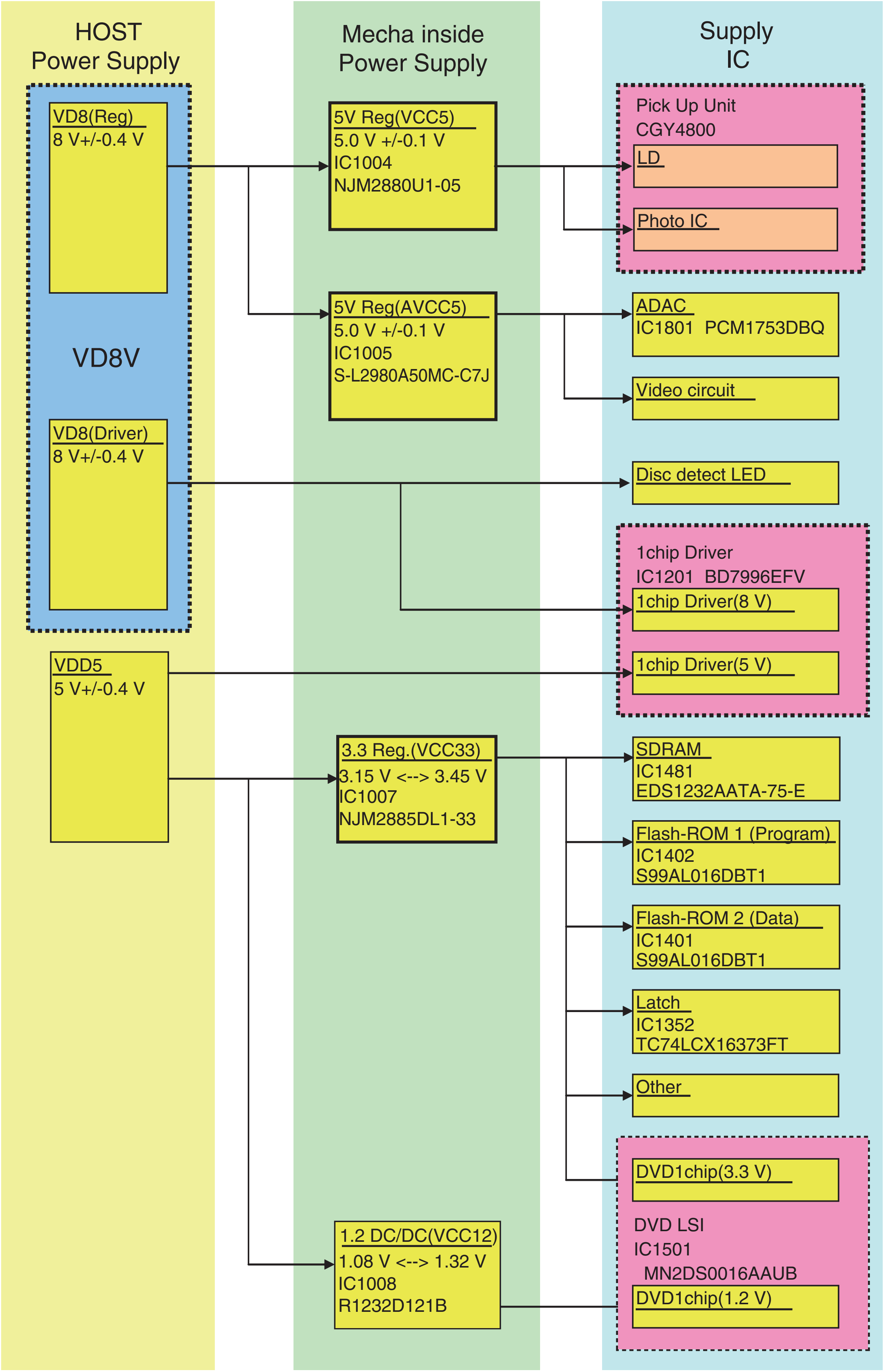
◉ ATAPI connection configuration



1.7 Power Supply Map(MS5 base model)

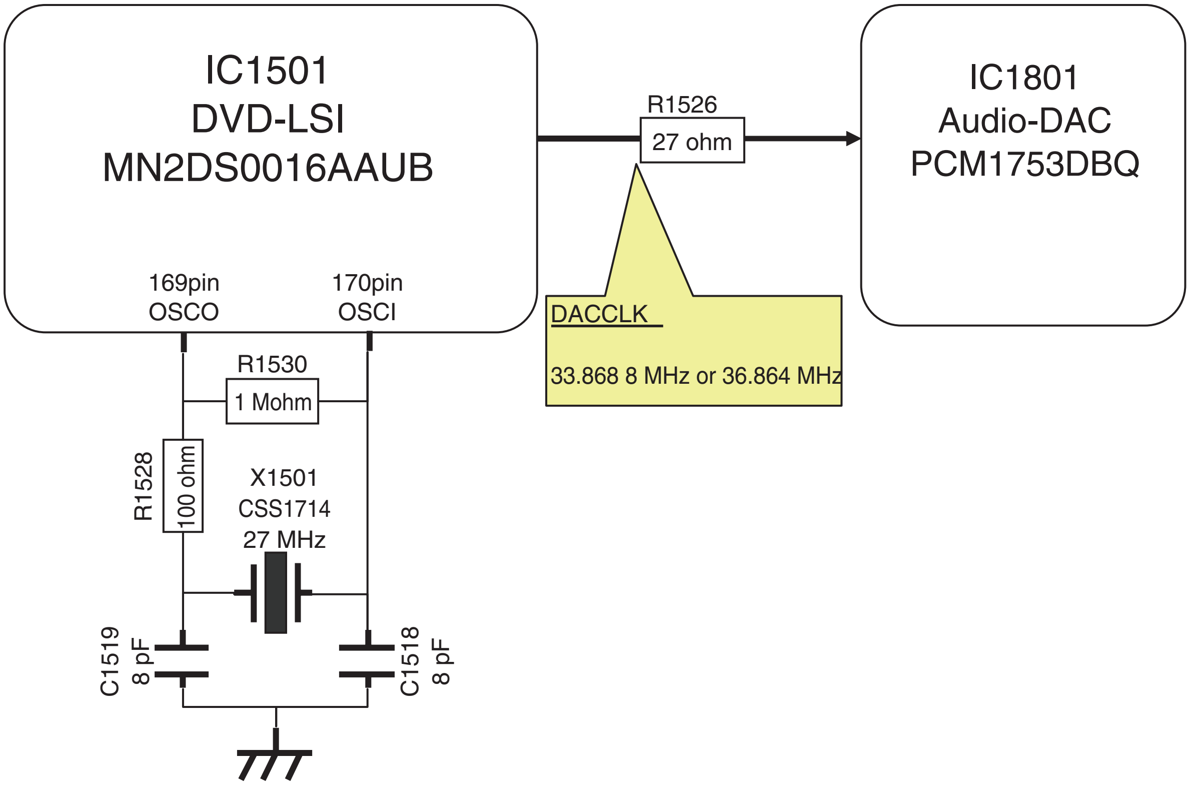


Power Supply Map(MS5AV code2 model)



1.8 Clock circuit

[Outline]
By connecting a 27 MHz crystal oscillator to DVD-LSI (IC1501), DACCLK for externally connected Audio-DAC is formed and supplied by the clock generator inside the DVD-LSI in addition to the clock used inside the LSI.



1.9 Audio circuit

[Outline]

① Analog audio signal

Serial 3 line digital output + DACCLK (audio clock) output from DVD-LSI (IC1501) are converted to analog audio signal by Audio-DAC (IC1801), and are output from HOST IF connector (CN1901). Furthermore, analog MUTE signal is also output from DVD-LSI (IC1501) via HOST IF connector (CN1901) simultaneously.

② Digital audio signal (IEC60958/IEC61937)

Digital audio signal (IEC60958/IEC61937), output from DVD-LSI (IC1501), is output via Multi-ch/Ripping IF connector (CN1851).

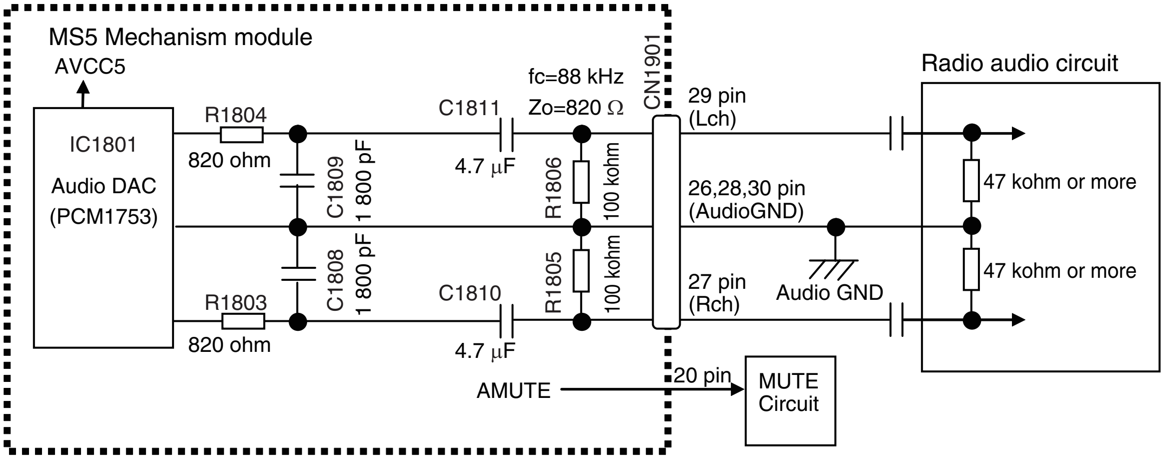
③ Digital multi-channel audio serial signal

Serial 6 line output from DVD-LSI (IC1501) is output via Multi-ch/Ripping IF connector (CN1851).

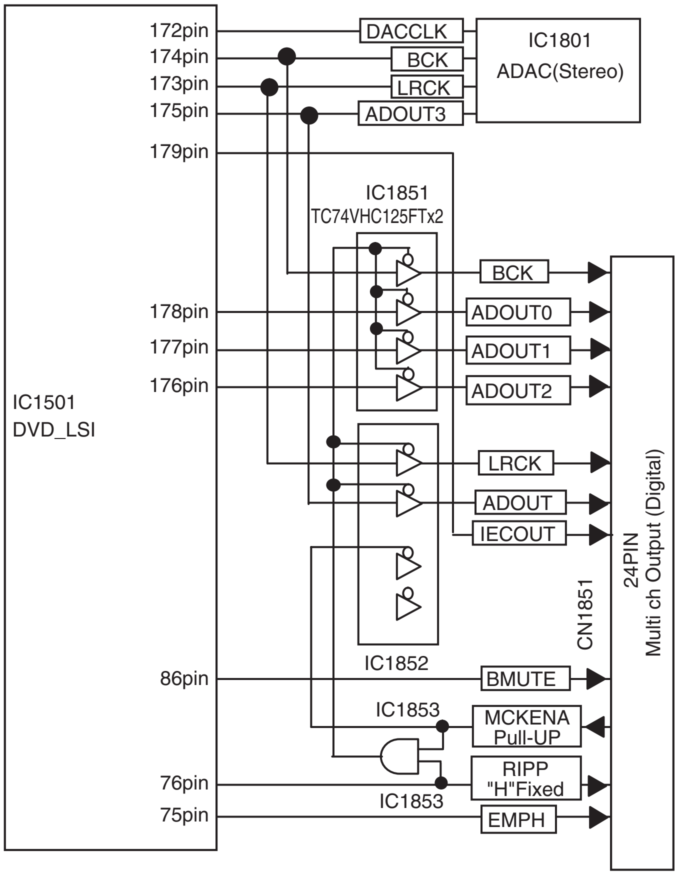
④ CD-DA ripping signal

Serial 3 line signal output + SUB-CODE signal, output from DVD-LSI (IC1501), are output in 4 times speed via Multi-ch/Ripping IF connector (CN1851).

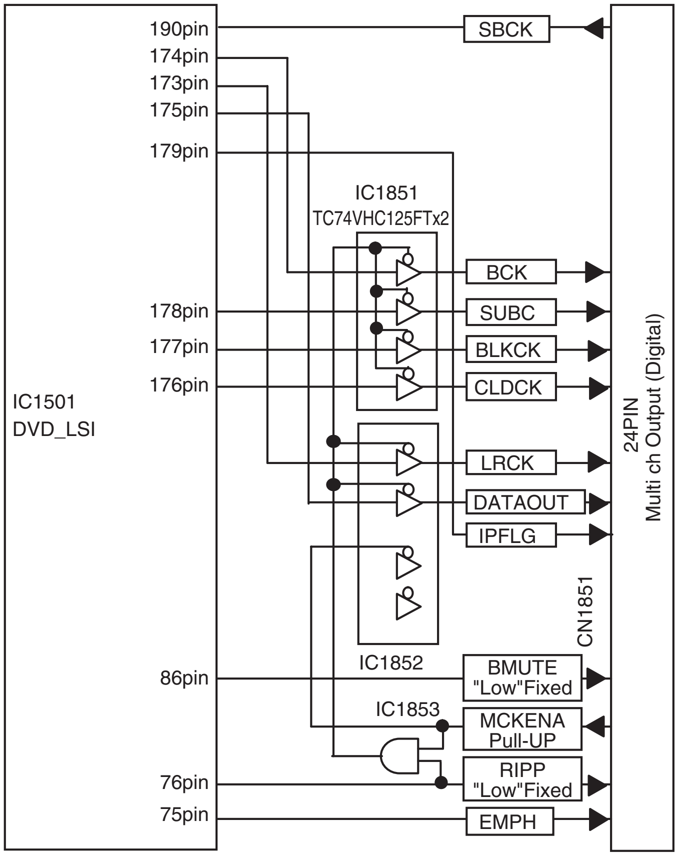
[Analog audio signal]



[Digital audio signal]



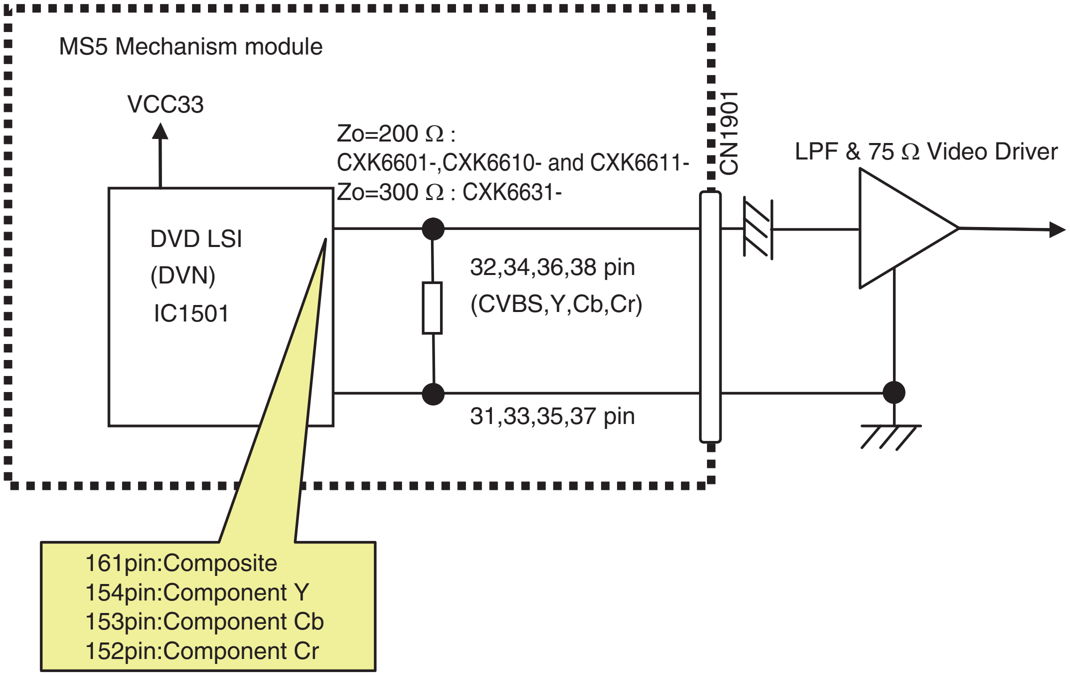
[CD-DA 4 times speed ripping signal]



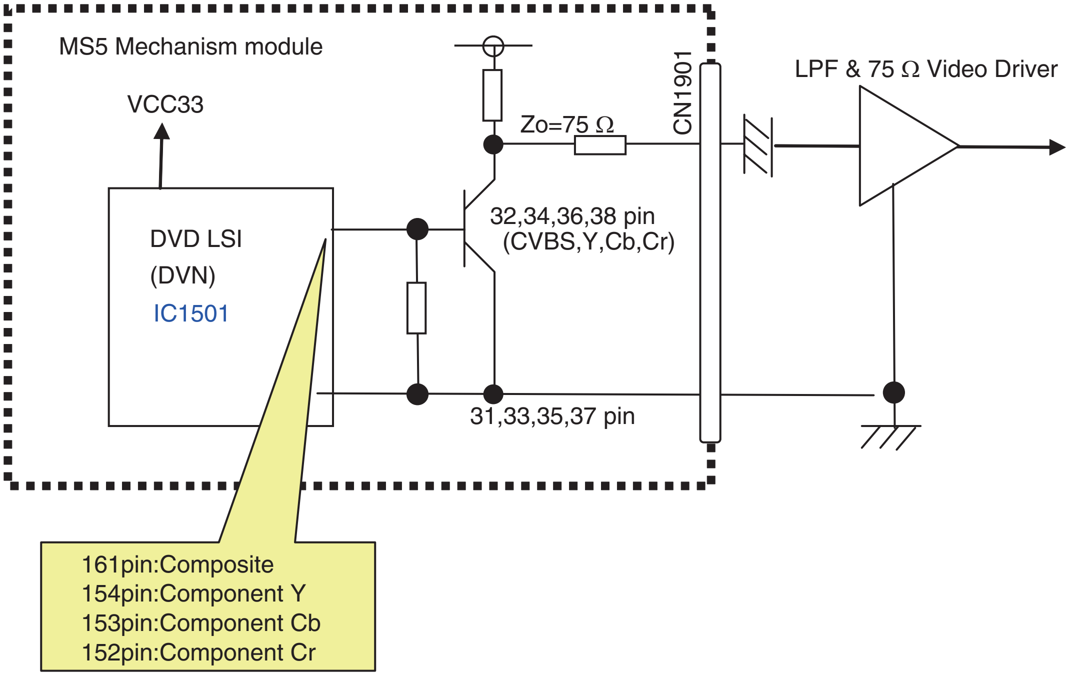
1.10 Video circuit

[Outline]
Composite signal and component signal are output from DVD-LSI (IC1501), and output from HOST IF (CN1901).
Incidentally, the buffer circuit of MS5AVcode2 model ->
CXK6631-,CXK6601-,CXK6610- and CXK6611- : No Mount, and the output signal from DVD-LSI is output as is.
CXK6630- : The buffer circuit is installed.

CXK6631-,CXK6601-,CXK6610- and CXK6611-



CXK6630-



1.11 SDRAM I/F

[Outline]
It is a memory for realizing the AV decoding function of DVD-LSI (IC1501). It is used for various purposes such as buffering of stream data before decoding, working area for decoding, and storing of AV data or output data after decoding.

◉ SDRAM interface

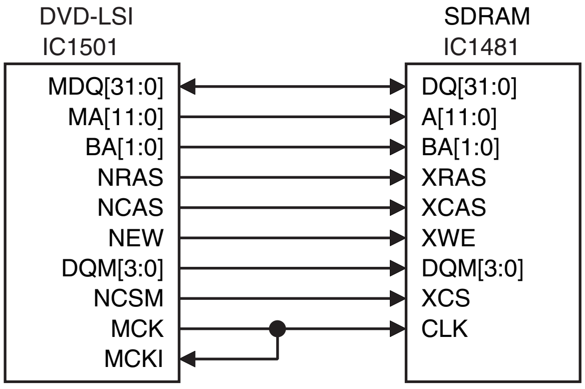
* When viewed from ↓ DVD-LSI

Signal Name	Bits	I/O	Description
MDQ[31:0]	32	I/O	Data bus of external SDRAM
MA[11:0]	12	O	SDRAM address
BA[1:0]	2	O	SDRAM bank address
NRAS	1	O	RAS signal of SDRAM
NCAS	1	O	CAS signal of SDRAM
NEW	1	O	Write enable signal of SDRAM
NCS	1	O	Chip select signal of SDRAM
DQM[0]	1	O	Mask signal for writing lower level byte of the lower 2 bytes in SDRAM
DQM[1]	1	O	Mask signal for writing higher level byte of the lower 2 bytes in SDRAM
DQM[2]	1	O	Mask signal for writing lower level byte of the higher level 2 bytes in SDRAM
DQM[3]	1	O	Mask signal for writing higher level byte of the higher 2 bytes in SDRAM
MCK	1	O	Clock input to SDRAM
MCKI	1	I	Clock input for data input from SDRAM

◉ SDRAM specifications

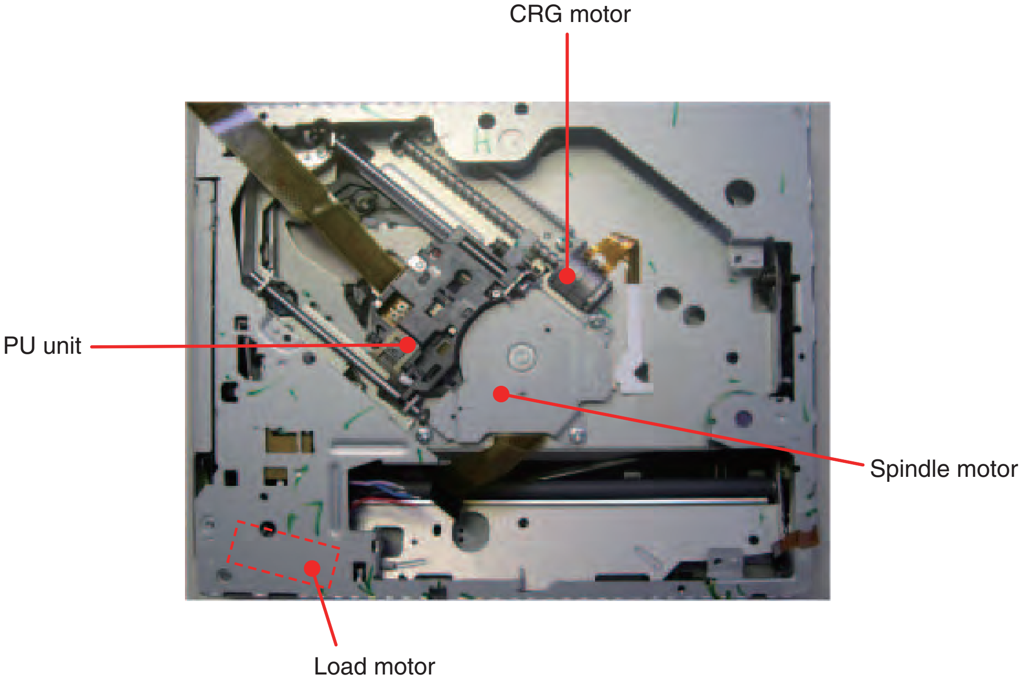
- Data bus width: 32 bit
- Operating frequency: 121.5 MHz
- CAS latency=3
- 8 word burst transfer
- Manual precharge
- CAS before RAS refresh (Auto refresh)

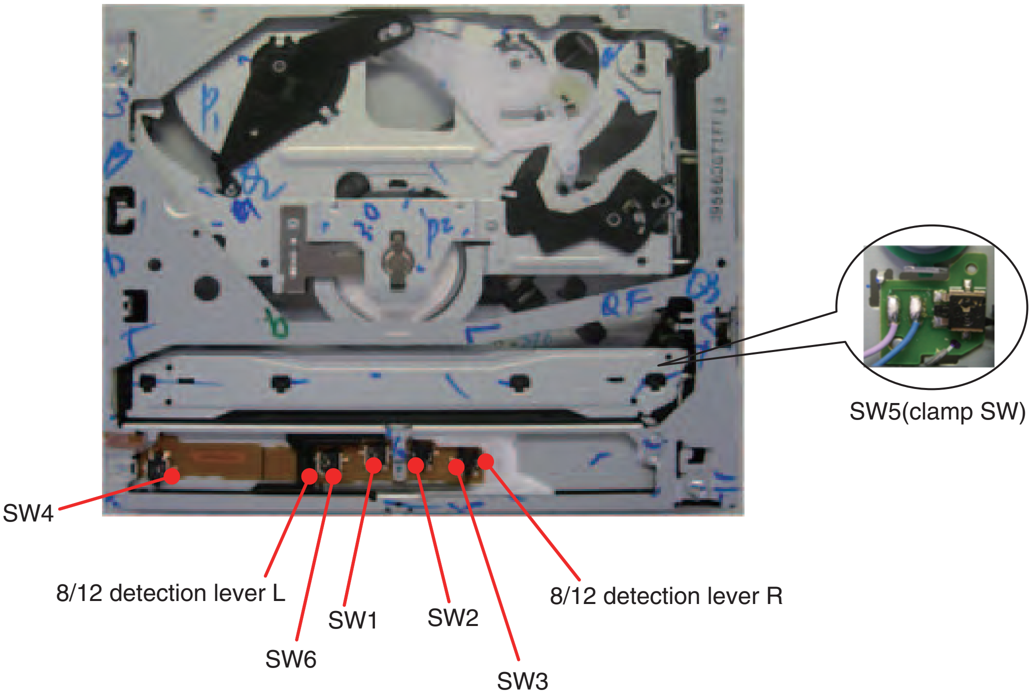
◉ SDRAM connection configuration



2. MECHANISM DESCRIPTIONS

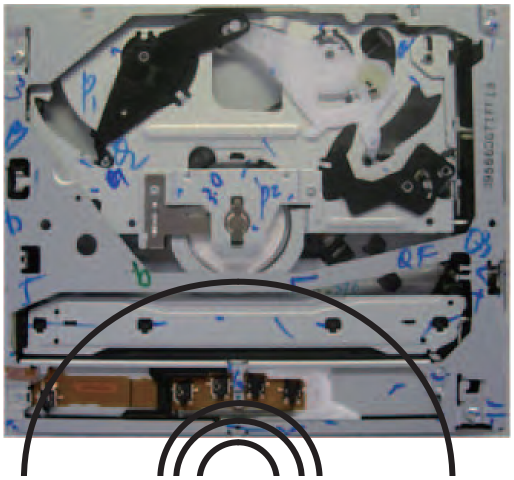
Construction



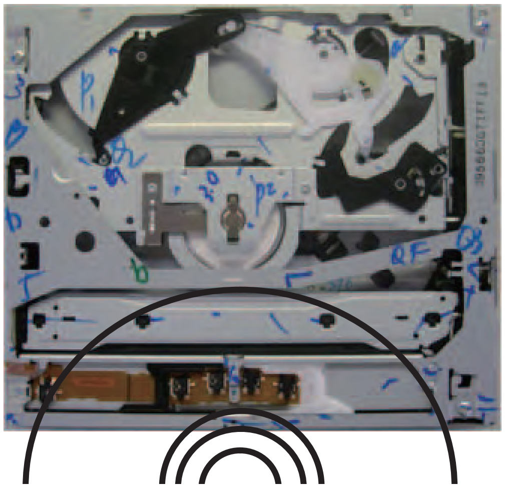


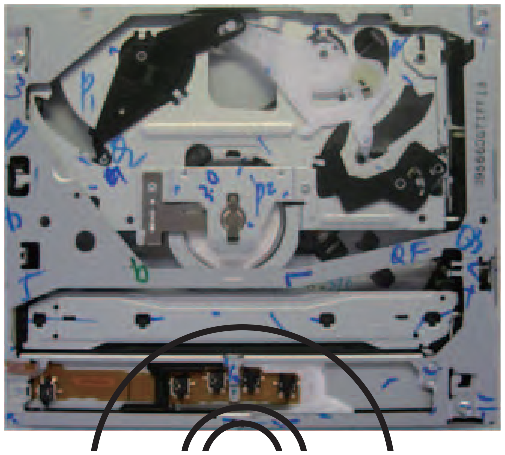
2.1 Disc loading operation

1. When the disc is loaded, 8/12 detection lever R · L will slide, either SW1 or SW2 will be ON→OFF, and the loading motor will start.
2. In the case of a 12 cm disc, the disc is transported and SW3 becomes OFF and SW4 becomes ON, and the microcomputer judges as a 12 cm disc.



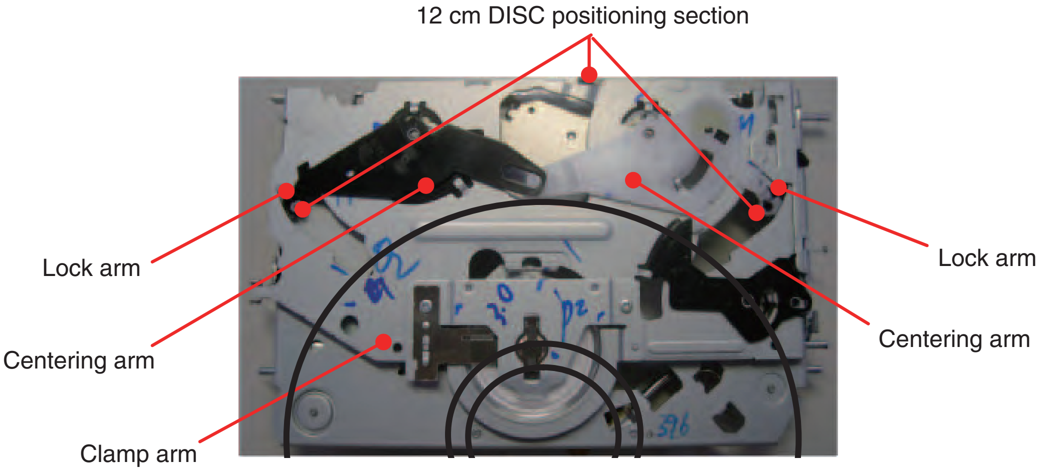
3. In the case of an 8 cm disc, even if the disc is transported, the SW3 OFF and SW4 ON state will not be realized, and the clamping motion will be taken. The microcomputer will judge as an 8 cm disc.



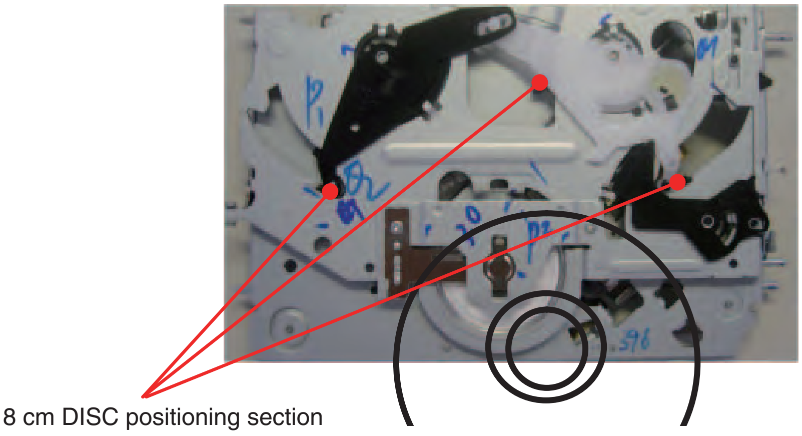


2.2 Disc centering mechanism

1. In the case of a 12 cm disc, the centering arm R・L will open by the disc being transported and both the lock arm R・L being pushed. Furthermore, the disc will be centered by the stopper of either the clamp arm or the centering arm R and stopped, and the clamping motion will be taken.

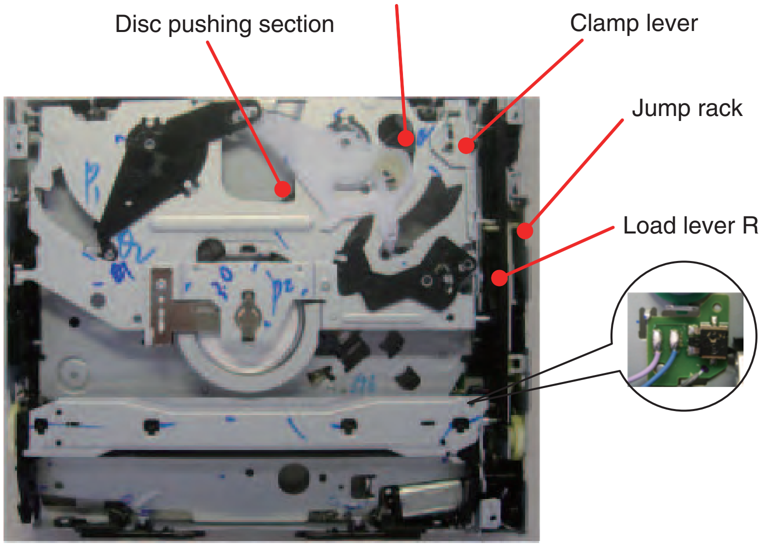


2. In the case of an 8 cm disc, if a disc is inserted being shifted to the left or the right, the disc will first hit the lock arm R or L.
   As the lock arm R and L are coupled via the centering arm R and L and the lock will not be released unless both are pushed, the disc will be restricted by the fixed lock arm and centered.
   The disc pushes out the detection arm while being centered, the disc stops at a position where the motion of the detection arm is completed, and the clamping motion will be taken.

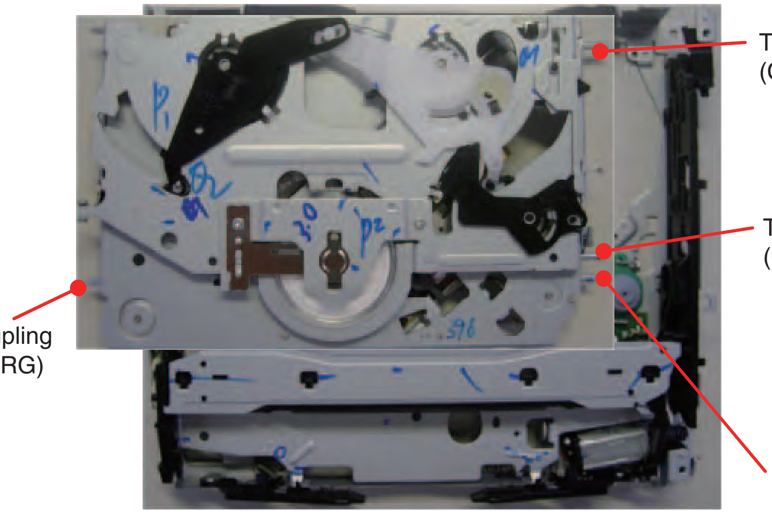


2.3 Clamping operation

1. When a disc is loaded, the clamp lever will be driven by the disc detection arm being pushed by an 8 cm or a 12 cm disc. By engagement of the jump rack and the lever driving gear, the disc clamping motion will start.



2. When the load lever R pushed by the jump rack moves to the front side of the mechanism, the roller shaft restricted by the cam of the load lever R will move downward.
   And the roller shaft is also restricted by the cam of the cam ring.
   The power of the roller shaft is transferred to the load lever L via the cam ring, and the load lever L will move to the front side of the mechanism.
   The coupling of the load cam attached to each load lever, three shafts of the CRG chassis unit and the shaft of the clamp arm will be released, and the clamping motion will be completed at a position where the switch pushing section of the load lever R turns the clamp SW to ON.


The shaft coupling to the cam (CRG)
The shaft coupling to the cam (Clamp arm)
The shaft coupling to the cam (CRG)
The shaft coupling to the cam (CRG)

2.4 Ejection operation

1. The loading motor reverse rotates, and the ejection motion will start.
2. In the case of a 12 cm disc, the ejection will be completed by OFF→ON→OFF of SW4.
3. In the case of an 8 cm disc, the ejection will be completed when both SW3 and SW6 become ON after either SW3 or SW6 is ON→OFF.

3. DISASSEMBLY

● How to hold the mechanism section (Fig 1)

1. Hold the main frame and the top frame.
2. As the mechanical strength of the front part of the top frame is not strong, do not hold this part.
3. Do not touch the switches provided on the top face of the mechanism section.
4. Be careful not to pull the flexible PCB on the side face.

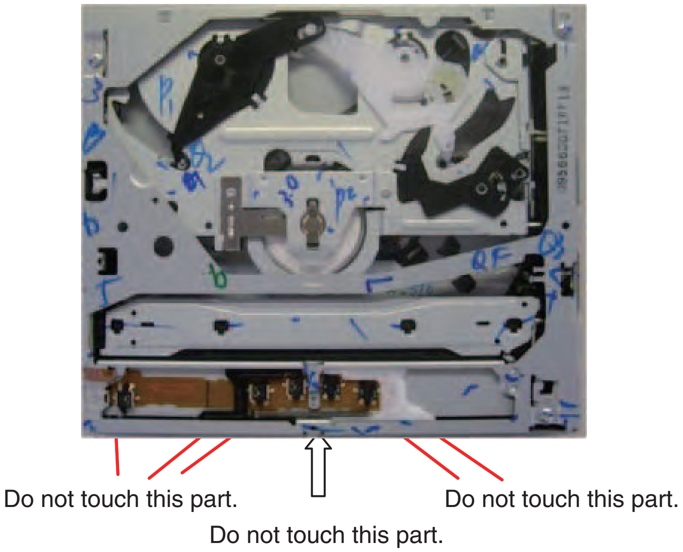
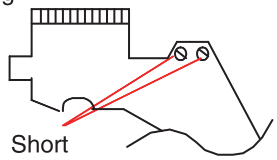


Fig 1

● How to remove the module PCB (Fig 2, Fig 3)

1. Put the mechanism section in locked state (disc load standby position).
2. Hold the mechanism module with its top face down.
3. Make the lands at 2 locations on the pick up flexible PCB short.
4. Disconnect the connectors of the pick up flexible PCB and the SPDL flexible PCB.
   (Be sure to disconnect the connectors as the flexible PCB will be damaged if the PCB is removed without removing the flexible PCB.)
5. Remove the solder joint of the lead wire of the load motor and the clamp SW.
6. Remove the two screws, and then remove the module PCB.
   (Lift up point A slightly and remove it toward B direction. Be careful as the point C is connected with a flexible PCB.)
7. Disconnect the connector of the 8-12 detection flexible PCB from the PCB.

Fig 2



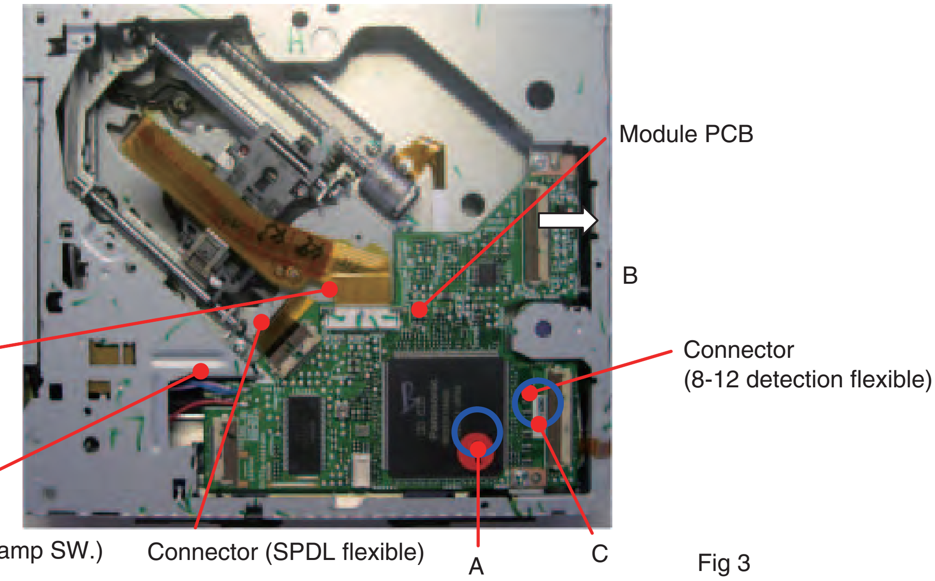

Module PCB
B
Connector
(pick up flexible)
Connector
(8-12 detection flexible)
Solder land
(load motor, lead wire of the clamp SW.)
Connector (SPDL flexible)
A
C

Fig 3

● How to remove the spindle motor (Fig 4)

1. Remove the module PCB according to the instructions in "How to remove the module PCB".
2. Remove the flexible PCB of the CRG motor from the connector of the spindle motor.
3. Remove the three motor mounting screws. When mounting or removing the motor, be careful not to deform the CRG chassis.

● How to remove the CRG motor assy (Fig 4)

1. Remove the module PCB according to the instructions in "How to remove the module PCB".
2. Remove the Mylar tape.
3. Remove the flexible PCB of the CRG motor from the connector of the spindle motor.
4. Remove the two screws, and then remove the CRG motor assy.

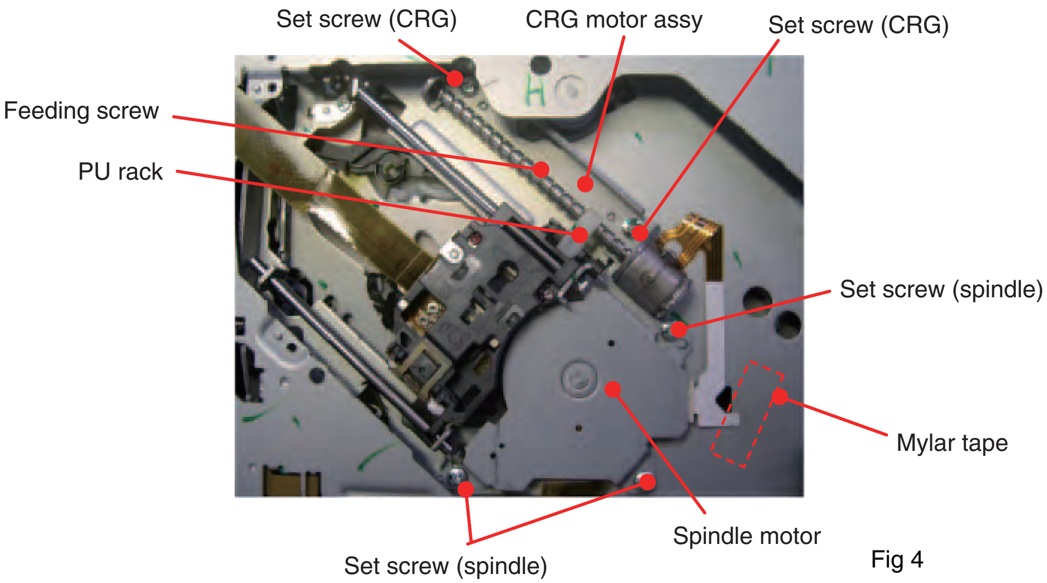


Fig 4

● How to remove the upper frame assy (Fig 5)

1. Remove the module PCB according to the instructions in "How to remove the module PCB".
2. Remove the vibration-proof spring (right front).
3. Remove the four screws, and then remove the upper frame assy.

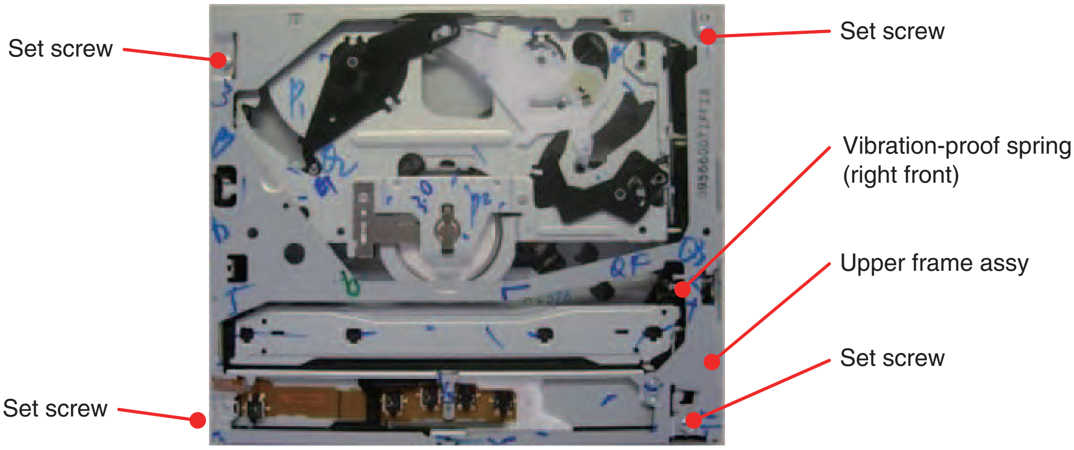


Fig 5

● How to remove the PU unit (Fig 6)

1. Remove the module PCB according to the instructions in “How to remove the module PCB”.
2. Hang the main shaft holding spring to the CRG chassis temporary hanger.
3. Remove the CRG motor assy according to the instructions in “How to remove the CRG motor assy”.
4. Remove the holding plate spring of the main shaft.
5. While lifting up the tip of the pick up rack, slide the main shaft, and remove the PU unit.

(Note) When mounting the PU unit again, make sure to do the adjustments of the devices mounted thereon according to the descriptions of the service manual. Furthermore, make sure to hang the main shaft holding spring permanently.

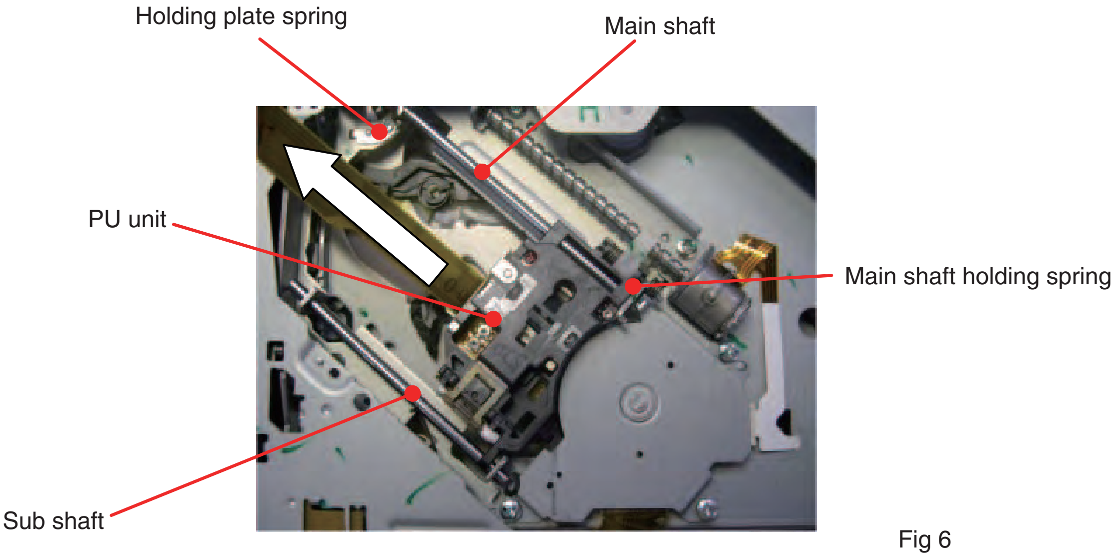
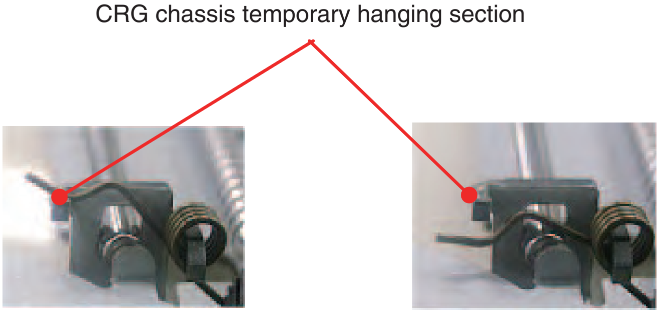


Fig 6



Temporary hanging

Permanent hanging

● How to remove the load gear assy (Fig 7)

1. Remove the module PCB according to the instructions in “How to remove the module PCB”.
2. Remove the upper frame assy according to the instructions in “How to remove the upper frame assy”.
3. Remove the two screws, and then remove the load gear assy.
4. Remove the jump rack and the rack attached spring.

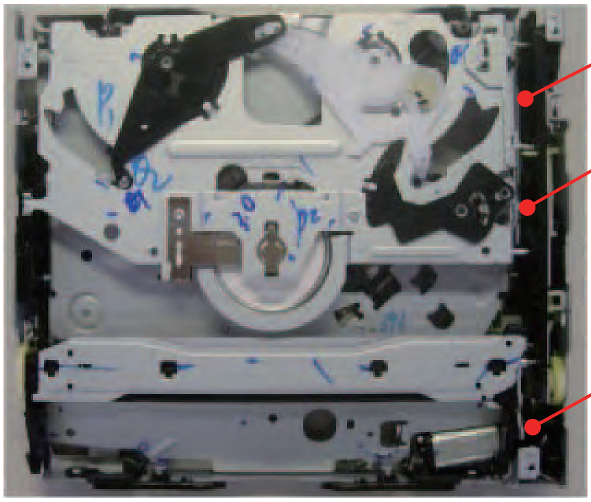


Fig 7

● How to make the empty clamp state (motor driven empty clamp) (Fig 8)

1. While driving the motor in the clamping direction, pull the clamp lever toward you.
2. Even if the clamp lever has pushed the jump rack putting it in the clamped state, continue pulling the clamp lever toward you lightly until it is stopped. It should be noted that the ejection will not work if the bar ring of the clamp lever is positioned at the center of the hook shape. (Fig 9)
3. When the clamping motion is finished, stop the motion before the convex shape of the jump rack touches the load lever R. (Fig 10)

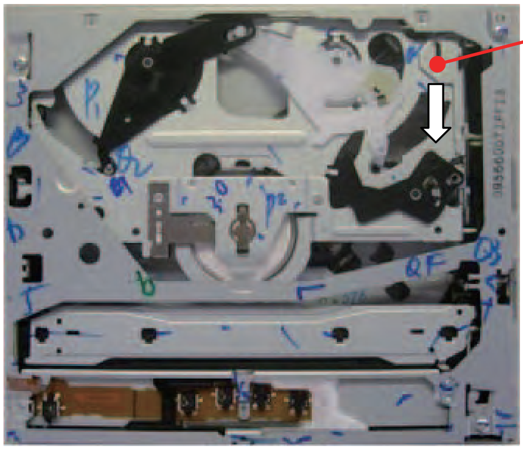


Fig 8

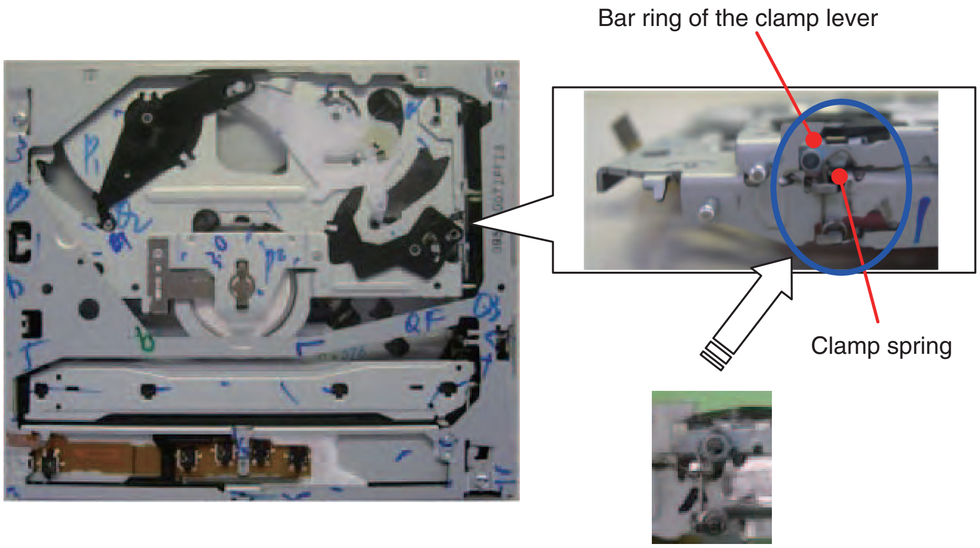


Fig 9

Make sure that the bar ring of the clamp lever does not get inside the clamp spring.

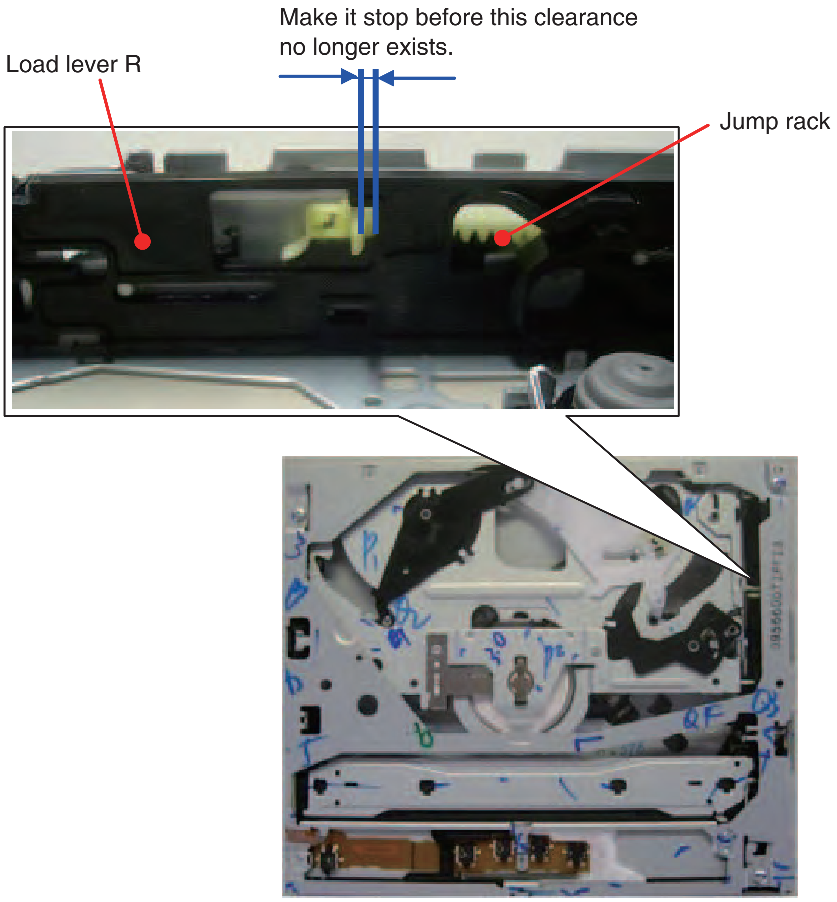


Fig 10

● How to make the empty clamp state (manual empty clamp) (Fig 11)

1. Remove the module PCB according to the instructions in “How to remove the module PCB”.
2. Remove the upper frame assy according to the instructions in “How to remove the upper frame assy”.
3. Remove the load gear assy according to the description in “How to remove the load gear assy”.
4. While pulling the clamp lever toward you, pull the slip stopper of the load lever R, and make it clamp.

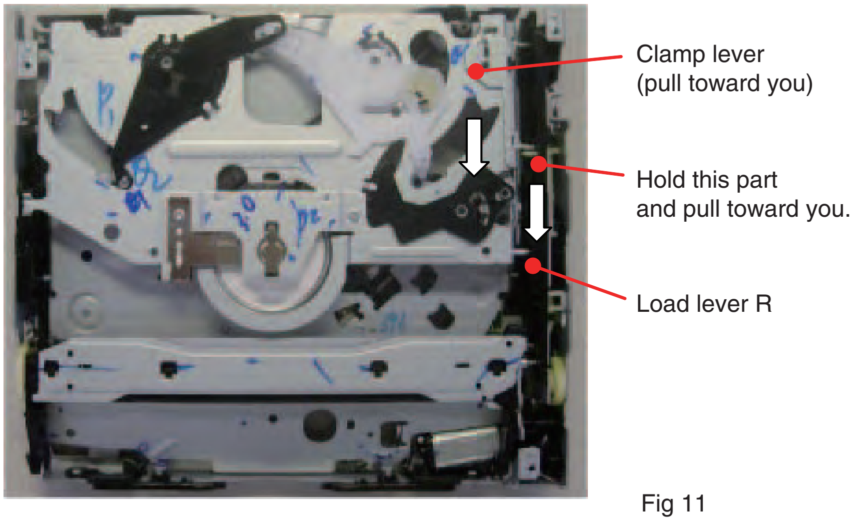


Fig 11

● How to remove the load motor assy (Fig 12)

1. Remove the module PCB according to the instructions in “How to remove the module PCB”.
2. Remove the upper frame assy according to the instructions in “How to remove the upper frame assy”.
3. Remove the load gear assy according to the description in “How to remove the load gear assy”.
4. Make the empty clamp state according to the description in “How to make the empty clamp state (manual empty clamp)”.
5. Remove the screw and then pull out the load motor assy from the side.

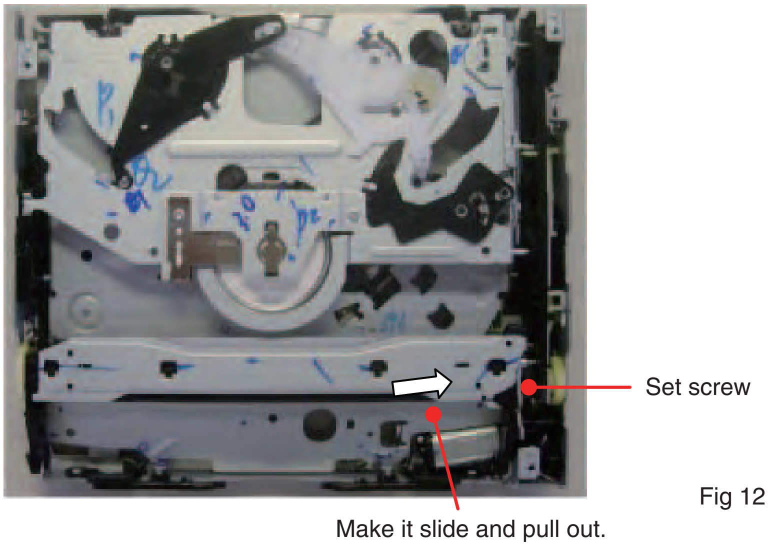


Fig 12

● How to remove the CRG assy (Fig 13)

1. Make the empty clamp state according to the description in “How to make the empty clamp state (motor driven empty clamp)”.
2. Remove the module PCB according to the instructions in “How to remove the module PCB”.
3. Remove the upper frame assy according to the instructions in “How to remove the upper frame assy”.
4. Remove the three vibration-proof springs.
5. Remove the CRG assy by lifting it up until the shaft slips out of the damper.

● How to remove the disc guide assy (Fig 13)

1. Make the empty clamp state according to the description in “How to make the empty clamp state (motor driven empty clamp)”.
2. Remove the module PCB according to the instructions in “How to remove the module PCB”.
3. Remove the upper frame ASSY according to the instructions in “How to remove the upper frame assy”.
4. Remove the two screws, and then remove the disc guide by lifting it up and placing it at 45° position and further sliding it to the left.

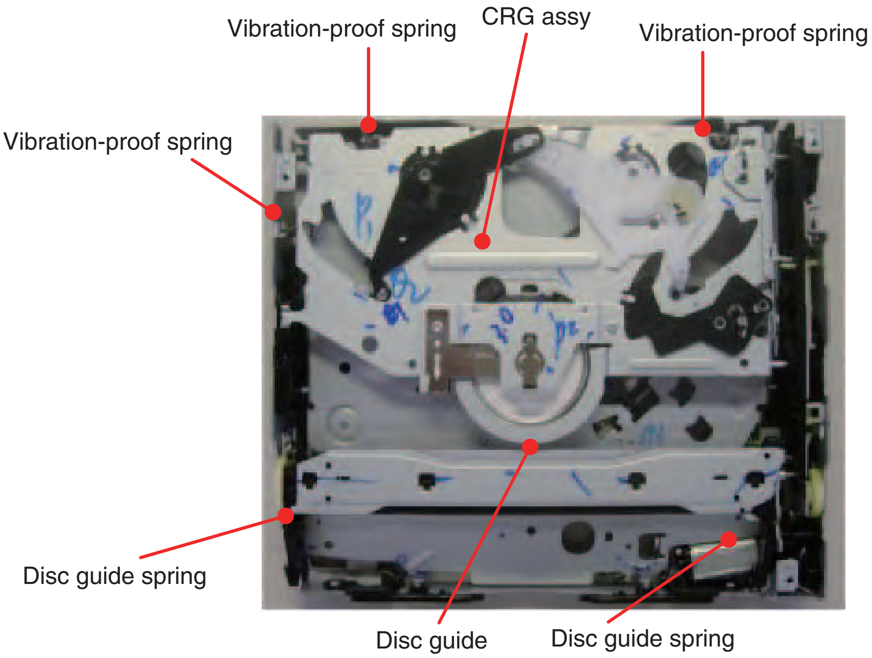


Fig 13

● How to remove the roller assy (Fig 14)

1. Remove the module PCB according to the instructions in “How to remove the module PCB”.
2. Remove the upper frame assy according to the instructions in “How to remove the upper frame assy”.
3. Remove the extension spring.
4. Remove the load gear assy according to the description in “How to remove the load gear assy”.
5. Make the empty clamp state according to the description in “How to make the empty clamp state (manual empty clamp)”.
6. Remove the disc guide assy according to the description in “How to remove the disc guide assy”.
7. Remove the CRG assy according to the description 4 and 5 in “How to remove the CRG assy”.
8. Push the slip stopper of load lever R toward the back, and move it until the end.
9. Remove the load motor assy according to the description in “How to remove the load motor assy”.
10. Remove the roller arm spring R • L.
    As for the roller arm spring R, remove only the tip hanging on the load lever R.
11. Remove the extension spring, and then remove the roller assy by lifting it up to the highest position and sliding it toward the right.

(Note) Be careful not to deform the shutter when removing the roller assy.

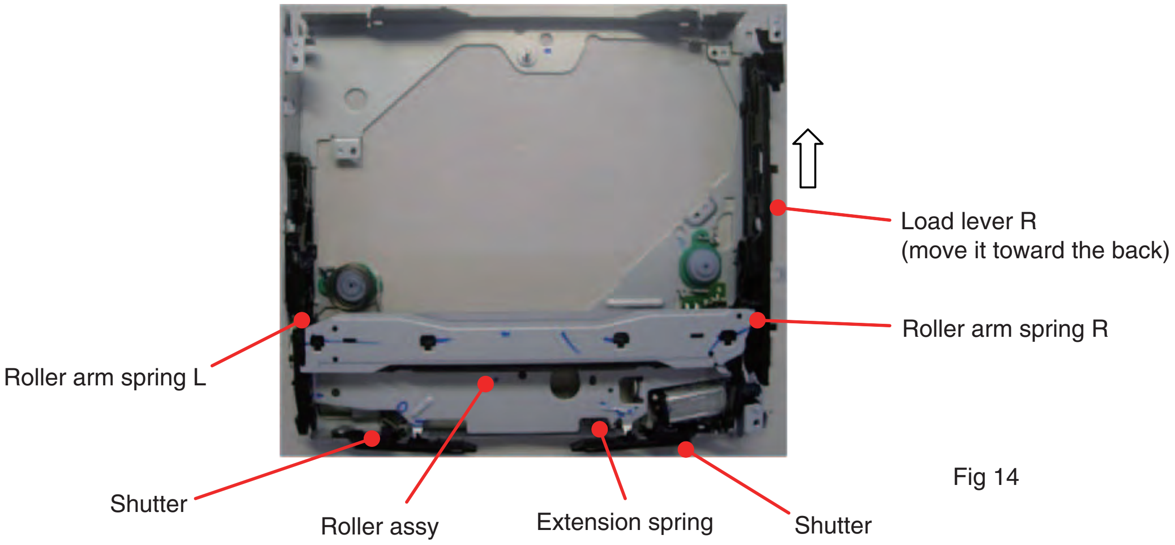


Fig 14

● How to remove the damper (Fig 15)

1. Make the empty clamp state according to the description in “How to make the empty clamp state (manual empty clamp)”.
2. Remove the module PCB according to the instructions in “How to remove the module PCB”.
3. Remove the upper frame assy according to the instructions in “How to remove the upper frame assy”.
4. Remove the three vibration-proof springs.
5. Remove the CRG assy according to the description 4 and 5 in “How to remove the CRG assy”.

6.1 Release the clinch by holding the A section of the damper attached to the main frame using a pair of pliers and lifting it up toward B direction.
(As there will be a gap made at section C, remove the damper.)

6.2 Insert a screwdriver into section D, release the clinch by lifting up a metal plate on the other side, and remove the damper.

7.1 Remove the CRG motor assy according to the description 3 and 4 in “How to remove the CRG motor assy”.

7.2 Remove the damper.

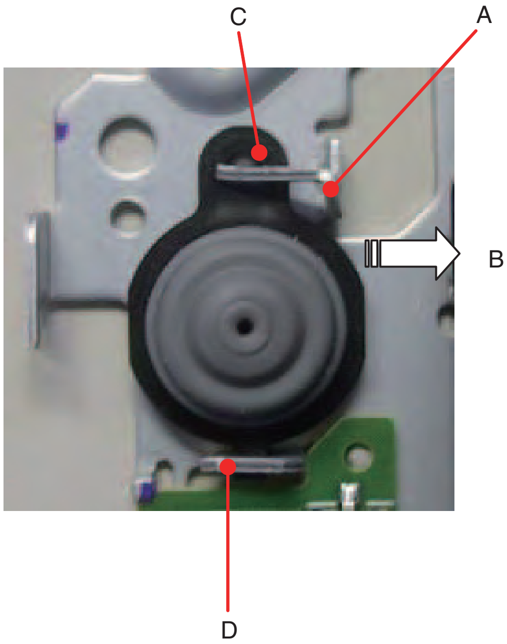


Fig 15